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TOWARD 2025:

Assessing Ontario's Long-Term Outlook

Ontario

MINISTRY OF FINANCE

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FOREWORD

THE HONOURABLE GREG SORBARA
MINISTER OF FINANCE

Toward 2025: Assessing Ontario's Long-Term Outlook is the first-ever long-range assessment of Ontario's fiscal and economic environment produced by the provincial government. It is designed to inform Ontarians and those interested in Ontario's future about the challenges and opportunities that Ontario will face over the next 20 years.

The report arises out of the McGuinty government's commitment to transparency in decision-making and accountability to the people we serve. As part of that commitment, the *Fiscal Transparency and Accountability Act*, passed in 2004, includes a requirement for a long-range assessment of Ontario's fiscal environment within two years of each general election.

Toward 2025 is the first report of its kind in Canada and among the first in the world to be produced by a sub-national government. The United Kingdom, Australia and New Zealand have recently released similar long-term reports.

Predicting the future is a risky business. Inevitably, over the course of the next 20 years, there will be influences affecting Ontario that no one can foresee today. Speculation on those sorts of events is beyond the scope of this report. The intention here is much more focused: to identify and analyze the challenges and opportunities that this province may face over the next 20 years. The data in the report is the most reliable available today.

We hope the report will find its way to a broad audience of readers. It is designed both to inform, and to inspire informed discussion, on the issues that may influence policy-making over the next several years. Clearly, it is not a statement of government policy nor a prescription for decision-making. Readers looking for in-depth analysis of current government policy and programs can turn to various other government publications, including the *Ontario Budget*, *Ontario Economic Outlook and Fiscal Review*, *Ontario Public Accounts* and *Getting Results for Ontario: Progress Report 2004*.

Democratic societies such as Ontario thrive when decisions on public policy issues are preceded by well-informed public discussion and debate. The goal of this report is to support those discussions and shape those debates with reliable information and relevant, articulate analysis. It is one important way in which we can work together toward a more vibrant economy and a stronger democracy.

Finally, I express our government's appreciation to the men and women both within and outside of our administration who have contributed to this report. The quality of their work stands as another concrete example of their commitment to Ontario's future.

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EXECUTIVE SUMMARY

Fiscal Transparency and Accountability Act

In accordance with the *Fiscal Transparency and Accountability Act, 2004*, this report presents a long-range assessment of Ontario's economic and fiscal future. It includes a description of anticipated changes in the Ontario economy and in the demographic profile over the next 20 years; a description of the potential impact of these changes on the public sector and on Ontario's fiscal situation during that period; and an analysis of key fiscal issues that are likely to affect the long-term sustainability of the economy and the public sector.

This report represents an open invitation to governments, businesses, academics, labour, not-for-profit organizations and citizens, as well as to all of those interested in the future of Ontario for further debate and discussion.

METHODOLOGY

In order to provide a foundation for the economic and fiscal projections in this report, a number of economic and fiscal scenarios were examined, culminating in a base case. Past and forward-looking trends were examined and used to make reasonable assumptions about the future. All scenarios assume, most importantly, no changes in current public policy.

Methodology assumes no changes in policy

In addition to the base case, alternative scenarios were produced to explore potential variations in the key underlying assumptions of the base case.

The base case includes a number of core assumptions:

- past trends will continue;
- the current framework for government spending (programs and services) and revenues (tax structures) will remain the same; and
- some external factors will continue to affect Ontario: the health of the U.S. and global economies, oil and energy prices, federal policy decisions and interest rates.

The base case is not meant to suggest that policy will not change, but that the long-term projections cannot take into account what government policy may be.

CONTENT OF REPORT

The report has six chapters that together outline some of the major challenges and issues that Ontario may face over the next 20 years.

Chapter 1: Demographic Projections and Implications

Major trends identified

This chapter presents the major demographic trends facing the province and provides some analysis of the implications of those trends. Demographics have a significant impact on the affairs of the province — including its labour force, revenues, health care costs and education needs.

Population expected to reach 15.7 million by 2025

The chapter summarizes five important demographic trends over the next 20 years:

1. Ontario is expected to have population growth of 3.1 million — for a total population of 15.7 million by 2025;

2. growth is projected to come primarily from immigration;
3. growth is expected to be concentrated in the Greater Toronto Area, which is projected to be home to almost 7.7 million people by 2025;
4. the population is expected to have an older age structure — the share of seniors in the population will rise rapidly from 12.9 per cent in 2005 to 19.4 per cent in 2025; and
5. growth of the core working-age population (ages 15-64) is projected to slow considerably from 1.6 per cent annually in 2005-06 to 0.2 per cent annually by 2024-25.

Labour-force growth to slow

This chapter also analyzes five major implications of demographic trends including the slowing of labour-force growth; the changing composition of personal income and consumption patterns and their effect on government revenues; continuing pressure on health care expenditures; easing pressure on primary and secondary education expenditures; and increasing demands for urban infrastructure.

Chapter 2: A Long-Term Projection of Ontario's Economic Growth

This chapter describes the major assumptions in the report's economic base case in detail and discusses projections for the province's long-term economic growth. The chapter discusses the internal, external and structural factors that have, and are expected to continue to have, an effect on Ontario's growth.

Long-term economic growth projected

Fundamental internal factors expected to affect Ontario's economic growth are total labour-force growth and growth in productivity. External factors discussed include the U.S. economy, oil prices, exchange rate, and inflation and interest rates.

Broader structural factors, beyond the scope of the base-case model, that are anticipated to shape the growth of the economy, include adapting to rapid technological change; changing trade patterns within Canada and with the world; and continuing globalization of financial markets. Chapter 2 also briefly identifies several key long-term infrastructure issues including public transit, energy supply and demand, and water supply.

GDP per person to rise

This chapter also includes a discussion of structural forces that could affect Ontario's economy including the shift from goods to services employment and rapid change within sectors. The chapter indicates that annual GDP growth is projected to moderate slightly (to 2.3 per cent per year) as a result of slower labour-force growth. However, GDP per person is projected to rise from $38,000 in 2004 to $52,000 by 2025 (after adjusting for inflation), due to positive productivity growth. The unemployment rate, which is now 6.6 per cent, is projected to drop to 4.1 per cent by 2025.

Appendix 2A then focuses on three sectors that were specifically chosen for their significant employment growth potential. The appendix demonstrates that the Ontario economy has adapted to dramatic changes over the past two decades, and is well positioned to adapt to the challenges of the next 20 years.

Between Chapters 2 and 3, the report offers long-term views on Ontario of two external experts: Glen Hodgson, Chief Economist of the Conference Board of Canada, and Tom McCormack, Director of the Centre for Spatial Economics.

External experts contribute

The Hodgson essay on global economic trends highlights the importance of key issues for Ontario including global demographic transformation; national economic policy; the pace and nature of globalization; the challenge of resource and environmental sustainability; and multi-faceted threats to security.

The McCormack essay provides an analysis of the factors that will shape the economic geography of the province. He describes the concentration of growth in the Golden Horseshoe and predicts the continuation of this trend over the next 20 years, stressing the need to provide infrastructure that will enable growth while sustaining a high quality of life.

Improving productivity important

The next three chapters describe the key issues that, at this time, are anticipated to have a significant effect on Ontario's economic environment. These issues — productivity, health care and intergovernmental finances — are not the only ones that will have an impact on Ontario, but they are most likely to have an important and even primary influence on the finances of the government and so were chosen for inclusion.

Chapter 3: Strengthening Productivity Growth

This chapter examines the importance of productivity to the Ontario economy and its impact on GDP. Increasing productivity is important; apart from labour-force growth, it is the only way for the economy to grow in real terms. It is the sole basis for improvements in per-capita incomes. The focus on productivity reflects its potential for wealth creation and improving the standard of living.

Innovation and education strongly encouraged

The focus of the chapter is on the levers that can improve productivity growth. They include an effective and responsive education system; a flexible labour market that supports new graduates and new immigrants; business investment that enables Ontario businesses to continue to compete effectively; research and development, including stronger ties between academia and business; a competitive tax structure; and good, functioning infrastructure. Government, business and academia all play a role in enhancing productivity.

Chapter 4: Drivers of Future Health Care Costs

Health care is fiscal challenge

This chapter depicts the potential future costs of health care. Health care represents a significant fiscal challenge for the Ontario Government. Given reasonable assumptions, health care's share of provincial program spending is projected to rise from 45 per cent (2004-05) to about 55 per cent (2024-25). Health care spending is projected to grow faster than GDP — averaging 6.0 per cent annually from 2009-10 to 2024-25.

Health care costs are driven by three factors: demographics (both increasing population and aging), inflation and utilization. Utilization refers to the amount of health care services that people use. For example, a new medical discovery could result in an increase in utilization as Ontarians would be able to take advantage of a service that was previously unavailable. The growth in utilization refers to the increase in the consumption of health care over and above the increases driven by population growth, aging and inflation.

Demographics and utilization to drive up costs

The key assertion of this chapter is that both population growth and aging as well as utilization are the key drivers of costs. The estimated contribution of aging to projected average annual growth in government health spending is just over 1 per cent (of the 6.0 per cent growth). Towards the end of the next 20 years, the contribution of aging relative to population growth is expected to increase as the oldest cohort of the baby boom reaches their seventies. This is because, on average, health care costs are higher for older people. For example, in 2002, the average annual per-capita health care expenditure in Ontario was $2,238, while for those over age 85 the per-capita expenditure was $17,052.

Utilization plays a major role in increasing health care costs, but its future rate of growth is highly uncertain. While increases have the potential to improve people's lives and generally correlate with a healthier society, the government must be aware of the new costs associated with advances in medical technology.

Chapter 5: Intergovernmental Finances

Intergovernmental fiscal framework relevant

This chapter describes the fiscal framework within which this provincial government operates. To comprehensively project Ontario's fiscal sustainability, it is crucial to include a discussion of the roles of funding partners. The chapter examines intergovernmental finance in areas such as taxes, transfers, revenues and expenditures.

Ontario's interaction with the federal government does and will continue to have a bearing on the province's fiscal position. Chapter 5 projects that the fiscal capacity of the federal government will continue to exceed that of the provincial government — particularly in light of the Province's responsibility for health care.

The chapter projects that if current policy continues unchanged, federal transfers would drop from 16 per cent of Ontario's total revenues to 13.5 per cent by 2024-25. Federal transfers for health, postsecondary and social programs are projected to decrease as a share of Ontario program spending from the current 24 per cent to 18 per cent in 2024-25.

Municipal partners important

Ontario's 445 municipalities receive both federal and provincial financial support through various arrangements. They have an important and growing role in the economic future of the province. Municipalities deliver local economic initiatives, help support social programs and maintain a proportion of public infrastructure.

Chapter 6: Ontario's Long-Term Fiscal Prospects

The final chapter presents the key fiscal projections for the future. Some of the data are broken out into five-year segments to illustrate how the Province may, if there are no economic or policy changes, move in and out of surpluses and deficits over time.

As set out in the 2005 Ontario Budget, the government projects a budget balance in 2008-09 — or in 2007-08 if the reserve is not needed. The base-case projection then indicates that the Province is expected to be on course for a series of modest surpluses in the following decade if finances are managed prudently. After 2018, according to projections and absent of any policy change, there is a potential of returning to deficit, largely due to health care spending growing faster than revenues. Fiscal outcomes are sensitive to differences in the assumptions for economic growth.

Unexpected events

Chapter 6 also provides a brief list of some factors that would profoundly alter all projections. These include, but are not limited to, a pandemic, environmental disaster or global recession. Positive events would also alter projections profoundly, such as a major economic boom or a significant new cost-saving, productivity-enhancing invention.

The chapter concludes with a presentation of alternative scenarios that describe potential outcomes for Ontario's finances (using assumptions of both high and low economic growth), health care costs and changes in federal transfer payments.

Small changes can have major impact

The high and low economic growth scenarios demonstrate how small positive or negative changes in costs or growth can have a profound long-term impact on Ontario. By the end of the 20-year period, for example, a small increase in productivity growth rates could compound to a significant increase in the annual real income of the average Ontario resident and could lead to budget surpluses. At the same time, a minor increase in the growth of health care costs, could, if no policy action was taken in the meantime, lead to budget deficits.

CHALLENGES FOR ONTARIO

There is no doubt that in 20 years the Province will be operating in a different context than it is today. According to the data in this report, Ontario has the ability and resources to face the challenges of the next 20 years.

The report highlights, however, the importance of demographics and productivity growth. Ontario's population is growing, urbanizing and aging — placing pressure on health care, higher education and infrastructure. Economic growth will be rendered more challenging by a slower-growing workforce. Increasing productivity will require significant innovation from the public and private sectors alike. The Ontario economy is also sensitive to major external forces such as global economic performance and the price of oil.

Everyone has a role

All Ontarians play a role in responding to the challenges outlined in this report. Business and governments must be flexible enough to withstand and encourage change. Building and strengthening the foundation of a strong economy will involve upgrading productivity-enhancing infrastructure; supporting educational attainment; modernizing the regulatory framework; maintaining a competitive tax system; and managing government finances prudently.

On course to balanced budgets

The estimates and projections in this report underline the importance of enhancing productivity through innovation. Business, government and not-for-profit and academic sectors all need to encourage entrepreneurship and invention, enhance the skills the economy needs and champion Ontario to the rest of the world.

For its part, the Government of Ontario is on course to balanced budgets in the medium term. Staying the course and maintaining balanced budgets for the long term will require continued fiscal discipline. As this report emphasizes, managing health care costs while providing excellent care is key to the province's economic well-being.

Strong economic future

Ultimately, Ontario has a strong economic future — its economic diversity, educated population, strong public sector and healthy private sector will help ensure success.

A cautionary note: While this paper is a summary of significant work and analysis on the major issues that face Ontario, it is not a fiscal plan. It is a guide to what might happen; a considered list of what to pay attention to in the long term. The non-historical and forward-looking statements made here are not guarantees of future performance and involve certain risks and uncertainties, which are difficult to predict. Therefore, actual future results and trends may differ from what is projected.

GLOSSARY

Age Structure	The distribution of population by age.
Base Case	This is the projection based on assumptions that are closest to the median of private-sector forecasters and/or historical experience.
Canada Health Transfer (CHT)	A federal transfer provided to each province and territory in support of health care.
Canada Social Transfer (CST)	A federal transfer provided to each province and territory in support of postsecondary education, social assistance and social services, including early childhood development and early learning and child care.
Capital Stock	The dollar value of all the buildings, machinery and equipment in a country. It is difficult to estimate the value of older capital, because capital depreciates and becomes obsolete over time.
Cash Transfer	A cash payment made from one level of government to another.
Constant Dollar	A notional dollar whose purchasing power remains the same every year, unaffected by price inflation. It is calculated by dividing the actual dollar price of something by a price index, which estimates the change in price from a base year.
Debt-to-GDP Ratio	A measure of the government's debt in relation to the capacity of the economy to carry and repay debt; government debt as a percentage of the gross domestic product (GDP) of the jurisdiction.
Dependency Ratio	A measure of the number of people aged 0-14 and 65+ per 100 persons in the core working-age group (aged 15-64).
Equalization Program	Federal cash transfer program that allows all provinces, regardless of their ability to raise revenue, to provide roughly comparable levels of services at roughly comparable levels of taxation.
Fiscal Capacity	A quantitative measure of the resources that a jurisdiction can tax to raise revenue for public purposes; provincial fiscal capacity refers to the amount of revenue that would be raised by a representative tax system.
Greater Golden Horseshoe	An Ontario geographic region encompassing the Greater Toronto Area and a large part of Central Ontario including Peterborough, Waterloo, Niagara and Simcoe.
Gross Domestic Product (GDP)	The dollar value of all the goods and services produced in the economy in a year.
Natural Increase	The annual number of births minus the number of deaths. An important component of population growth.

Near-Shore Outsourcing	Involves outsourcing work to companies with the economic benefits of an offshore location, but a closer cultural, linguistic and geographic fit with the user organization; for example, business support service companies in Canada serving U.S. client companies and their customers.
Nominal	An amount expressed in dollar terms without adjusting for changes in prices due to inflation or deflation. It is not a good basis for comparing values of GDP in different years, for which a "real" value expressed in constant dollars is needed.
Net Migration	The difference between the number of people entering and the number of people leaving the province both from other countries and other provinces. An important component of population growth.
Non-Permanent Residents	Foreign citizens living in Ontario (e.g., foreign students, temporary workers or refugee claimants).
Population Aging	In demographic terms, population aging refers to an increasing share of seniors (ages 65+) in the population.
Productivity Growth	Increase in output per unit of a factor of production in the economy. As used in this report, it means the increase in real GDP per hour worked. It is an important measure of increasing prosperity in the economy.
Real GDP	A way to express gross domestic product so that the effects of rising prices are removed. See also "nominal" and "constant dollars."
Sensitivity Analysis	A technique used to study how results change if certain assumptions or input data in the model are modified.
Source Population	Within the context of education, that segment of the total population that supplies the majority of students enrolled at various levels within the education system. Students may also be drawn from other age groups within the population.
Spending Power	The ability of one level of government to spend in areas under the jurisdiction of another level of government, usually applied to federal spending in areas of provincial jurisdiction.
Territorial Formula Financing (TFF)	A federal cash transfer to the territorial governments to assist them in providing public services; based on a formula that fills the gap between expenditure requirements and revenue-raising capacity.
Utilization Rate	A measure of the use of government services, for example, health care, not related to demographic or inflationary pressures. For example, increases in the number of drug prescriptions per senior. Utilization charges are often associated with advances in medical technology.

1 DEMOGRAPHIC PROJECTIONS AND IMPLICATIONS

INTRODUCTION

Demographics influence fiscal prospects

The focus of this chapter is demographic trends as they have a significant influence on Ontario's long-term fiscal and economic prospects. This chapter discusses population trends in the past 20 years and projects demographic growth and change over the next two decades. Key implications of expected trends are outlined.

Much of Ontario's demographic outlook is understood, based on the current age structure. Five key trends are projected:

1. Slower but still significant population growth.
2. Population growth increasingly driven by immigration.
3. A concentration of population growth in urban regions.
4. Slower growth of the core working-age population.
5. A shift to an older age structure.

There are five key economic and fiscal implications of the demographic outlook:

1. The aging population and slower growth of the core working-age group will slow growth in Ontario's labour force, which may lead to a slower rate of real gross domestic product (GDP) growth.
2. The changing composition of personal income and anticipated shifts in consumption patterns as the population ages could moderate growth in government tax revenues.
3. Population growth and population aging will put continuing pressure on health care spending.
4. Slower growth in the number of children and youth may ease pressures on education spending.
5. The concentration of population growth in urban regions will result in increasing demand for urban infrastructure.

Population aging key factor

Overall, a key conclusion of this chapter is that population aging and slower growth in the core working-age population will put greater pressure on the government's balance sheet.

SECTION I: DEMOGRAPHIC TRENDS AND PROJECTIONS

Demographic Trends Over the Past 20 Years

There have been significant changes over the past 20 years in how the Ontario population has grown and how it is distributed by age. The major trends in this period include:

Strong population growth

- Strong population growth of almost 3.3 million people between 1985 and 2005.
  - On average, the population rose 1.5 per cent annually in this period.
  - Ontario's share of Canada's population also increased, from 36 per cent in 1985 to 39 per cent in 2005.

- A rising contribution to population growth from immigration.
  - Natural increase (births minus deaths) now accounts for only 30 per cent of growth compared to 52 per cent in 1985 and net migration (net international plus net interprovincial migration) now accounts for 70 per cent, up from 48 per cent.

- Falling fertility rates.
  - The total fertility rate fell below the replacement level of 2.1 in 1972. By 1985, it stood at 1.6 and had reached an all-time low of 1.48 in 2002 (latest complete data available).

Shift to older population

- A continuing shift to an older population.
  - Between 1985 and 2005, the median age of the Ontario population increased from 31.6 years to 38 years as a result of baby boomers aging, declining fertility rates and increasing life expectancies.
  - There were 974,000 people aged 65+ in Ontario in 1985 (10.5 per cent of the population). There are now 1.6 million seniors in the province (12.9 per cent of the population).
  - There were 1.9 million children aged 0 to 14 in Ontario in 1985 (20.5 per cent of the population). There are now just under 2.3 million children in the province (18.1 per cent of the population).
  - There were 6.4 million people in the traditional core working-age group (aged 15 to 64) in 1985 (69 per cent of the population). There are now almost 8.7 million people of core working age (69 per cent of the population).

Growth in urban centres

- Concentration of population growth in urban centres, particularly in the Greater Toronto Area (GTA).
  - About 60 per cent of provincial population growth over the last two decades took place within the GTA, which encompasses the City of Toronto and the regional municipalities of Halton, Peel, York and Durham.

- Increasing diversity.
  - The 2001 census revealed that 2.2 million people in Ontario, or 19 per cent of the population, belonged to a visible minority group compared to less than 9 per cent in the 1986 census.
  - Nearly one-quarter of the population spoke one of more than 100 languages other than English or French.

Demographic Outlook Over the Next 20 Years

Assumptions reflect past trends

This section sets out the assumptions driving the demographic projections and highlights five key demographic trends. It is expected that the next 20 years will see an acceleration of the population aging trend of the past two decades and a continuation of immigration, fertility, mortality and regional growth trends.

Assumptions Driving the Demographic Outlook

Population projections were prepared and released in March 2005 by the Ontario Ministry of Finance. The demographic assumptions reflect past trends in all streams of migration and the continuing evolution of long-term fertility and mortality patterns. The demographic assumptions used in the base case of the economic forecast of this long-term report are set out below.

Demographic Assumptions Overview

Components	Assumptions
Fertility	1.48 to 1.53 total fertility rate
Life Expectancy	Male: From 78.5 years in 2005 to 81.7 years in 2025 Female: From 83.2 years in 2005 to 84.5 years in 2025
Immigration	125,000 annually
Emigration	Increasing gradually from 19,000 the first year to 27,500 by 2025
Gain in Number of Non-Permanent Residents	4,000 to 2011, thereafter declining to 1,200 by 2025
Net Interprovincial Migration Gain	0 in 2004-05 5,000 from 2005-06 onwards

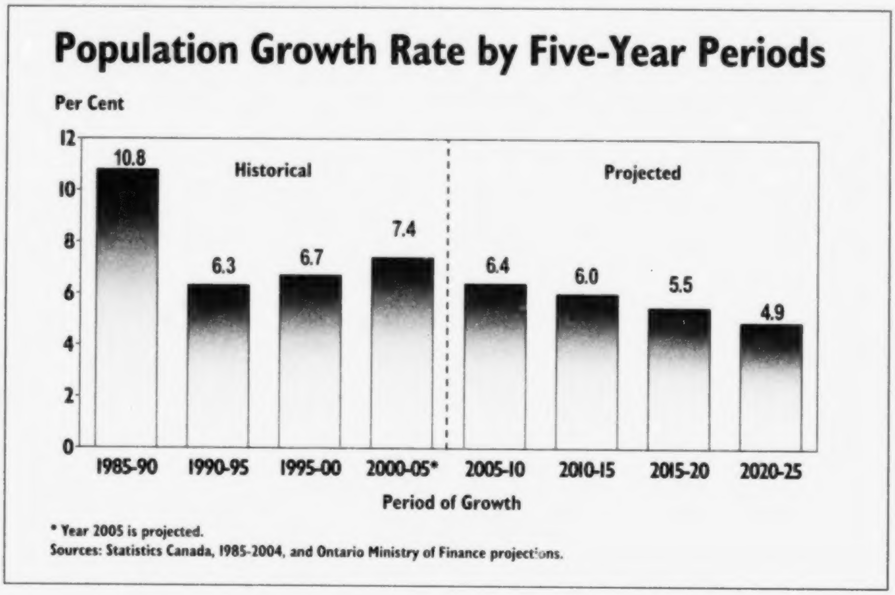
1. Slower But Still Significant Population Growth

Over the 2005-25 period, Ontario is projected to experience ongoing population growth. However, the rate of population growth is projected to decline from 1.3 per cent in the first year to 0.9 per cent in 2024-25 and to average 1.1 per cent annually over the period. This compares to average annual growth of 1.5 per cent over the past 20 years.

Projected population growth

While the population growth rate is projected to slow, the resulting increase in population to 2025 is almost equivalent to that of the past 20 years. The population is projected to increase by nearly 25 per cent or 3.1 million. Ontario's population is expected to rise from 12.55 million in 2005 to 15.66 million in 2025.

During the first 10-year period, population growth is projected to average 160,000 per year. Over the second half of the projection period, growth is projected to be less pronounced, falling to 141,000 in 2024-25.

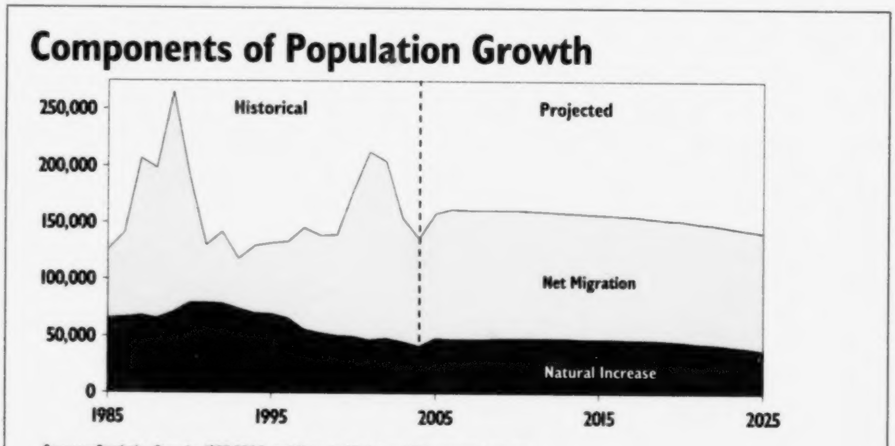


* Year 2005 is projected.
Sources: Statistics Canada, 1985-2004, and Ontario Ministry of Finance projections.

2. Population Growth Driven by Immigration

Immigration key to population growth

The share of population growth coming from natural increase (defined as births minus deaths) is projected to fall from 29 per cent in 2005-06 to 27 per cent in 2024-25. This can be explained by the fact that while births are projected to rise as the population grows, these births will in part be offset by more deaths as the population ages.



Sources: Statistics Canada, 1985-2004, and Ontario Ministry of Finance projections.

Net migration (the difference between the number of people entering and the number of people leaving Ontario both from other countries and other provinces) is projected to remain the principal driver of population growth over the next two decades.

Already accounting for 71 per cent of growth in 2005-06, net migration is projected to contribute 73 per cent by 2024-25.

125,000 new immigrants annually

Immigration is by far the largest component of net migration. In the Ministry of Finance population projections, Ontario is assumed to attract 125,000 immigrants annually over the next 20 years. Immigrants settle predominantly in the Greater Toronto Area (GTA) and other large urban centres in the province, and this pattern is projected to continue.

Net interprovincial migration is projected to have a smaller influence on net population growth in Ontario. The projected net gain to 2025 is 5,000 people annually.

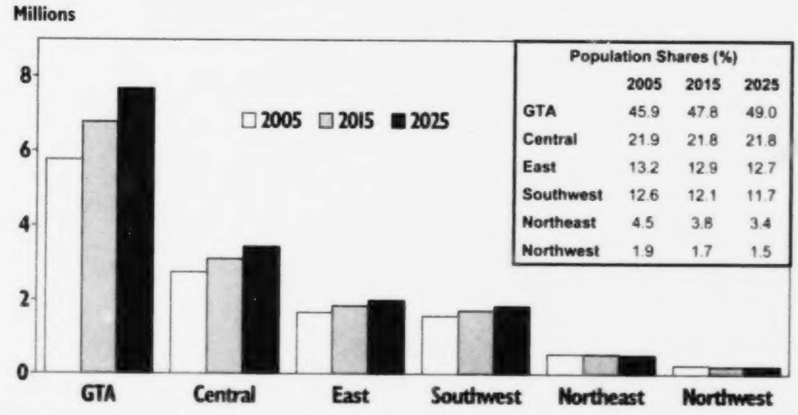
3. Concentration of Population Growth in Urban Regions

GTA to reach almost 7.7 million

Not all regions of Ontario are projected to experience the same rate of population growth. The GTA, which currently attracts about 40 per cent of all immigrants to Canada, is projected to be by far the fastest-growing region, accounting for about 60 per cent of Ontario's expected population growth over the period. It is projected to grow by 33 per cent, from 5.8 million in 2005 to almost 7.7 million in 2025. The GTA's share of provincial population is projected to rise from 46 per cent today to 49 per cent by 2025.

Central Ontario is projected to grow by 24 per cent, from 2.7 million in 2005 to 3.4 million in 2025. Eastern Ontario is projected to grow by 20 per cent, from 1.7 million to almost 2 million over the same period. Southwestern Ontario is projected to experience growth of 16 per cent, reaching over 1.8 million in 2025.

Population of Ontario Regions



Population Shares (%)	2005	2015	2025
GTA	45.9	47.8	49.0
Central	21.9	21.8	21.8
East	13.2	12.9	12.7
Southwest	12.6	12.1	11.7
Northeast	4.5	3.8	3.4
Northwest	1.9	1.7	1.5

Source: Ontario Ministry of Finance projections.

Northern Ontario communities currently have a relatively older age range and a trend of low levels of in-migration. Because of these trends, Northern Ontario communities and districts are projected to grow slowly or experience population decline over the next two decades. The aboriginal population in the North, with its high birth rate, may help keep the age structure slightly younger than would otherwise be the case. The overall population of the northeastern region is projected to decline by seven per cent, or by approximately 38,000 people. The overall population decline in the northwestern region is projected to be six per cent, or about 14,000 people.

4. Slower Growth of the Core Working-Age Population

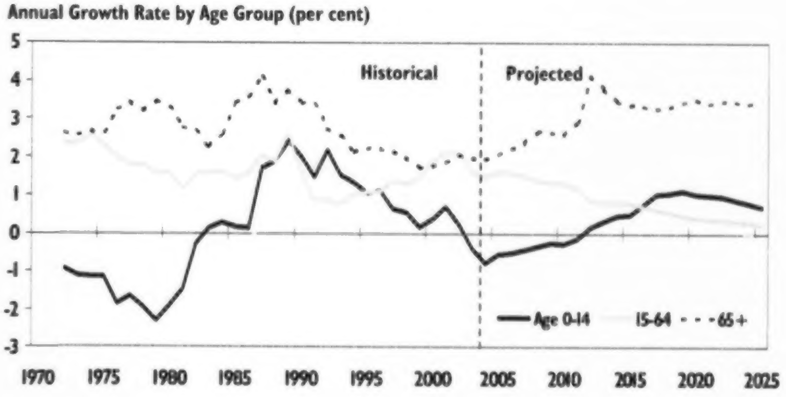
Slower growth in age 15-64 population

Over the next 20 years, the age structure of Ontario's population will change significantly. One key demographic trend, which will likely affect labour-force growth and hence economic growth, is the projected slower growth of the core working-age population (ages 15-64).

The core working-age population is projected to grow at a slower rate than in the past, increasing just 17 per cent compared to 35.1 per cent between 1985 and 2005. It is projected to grow from 8.7 million in 2005 to 10.1 million in 2025. Its share of population is projected to begin to fall in 2011, from 69.6 per cent in that year to 64.8 per cent by 2025.

The annual growth rate of the core working-age population is projected to decline over the whole projection period, from 1.6 per cent in 2005-06 to 0.2 per cent by 2024-25. The seniors and children's age groups are both projected to grow faster than the core working-age population during the second half of the projection period.

Growth Rate of Age Groups



Sources: Statistics Canada, 1972-2004, and Ontario Ministry of Finance projections.

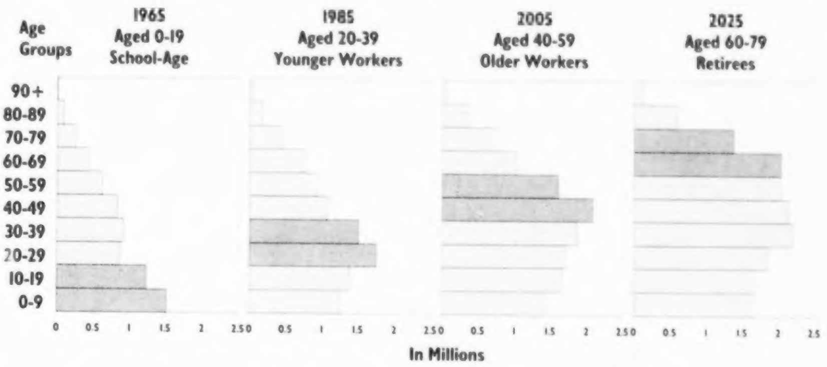
Within the core working-age group, the 15-24 age group is projected to keep growing for the first decade of the projections, and to subsequently decline. The 25-64 age group is projected to grow during the whole projection period, increasing by 21 per cent.

5. Shift to an Older Age Structure

Population aging to accelerate

The aging of Ontario's population will accelerate over the next 20 years as baby boomers begin to enter their senior years starting in 2011. By 2031, all baby boomers will be seniors (see also Appendix 1A).

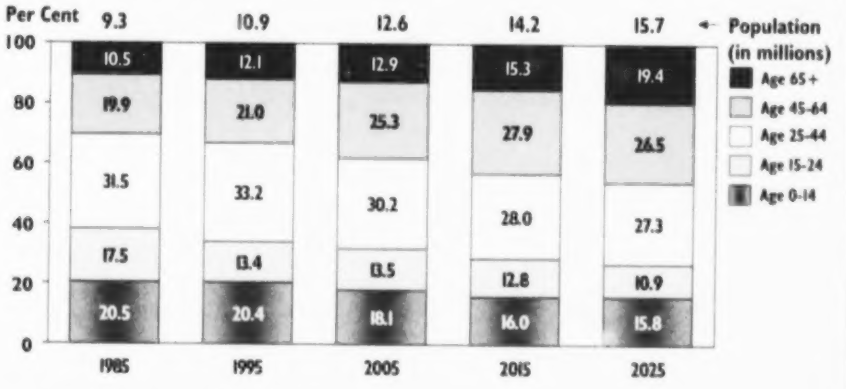
Baby Boomers Passing Through the Ontario Age Structure, 1965-2025



Sources: Statistics Canada, 1965 and 1985, and Ontario Ministry of Finance projections, 2005 and 2025.

Over the next 20 years, slower projected growth in the number of children and people of core working age, along with rapid growth in the number of seniors, will result in a shift to an older age structure. The median age is projected to rise from 38 years in 2005 to 42.1 years by 2025.

Age Distribution of the Population*



* Numbers may not add due to rounding.
Sources: Statistics Canada, 1985 & 1995, and Ontario Ministry of Finance projections, 2005, 2015 and 2025.

The number of children aged 0 to 14 is projected to increase by only 9 per cent over the projection period compared to total population growth of 24.7 per cent. Their share of the total population is projected to decline from 18.1 per cent in 2005 to 15.8 per cent in 2025.

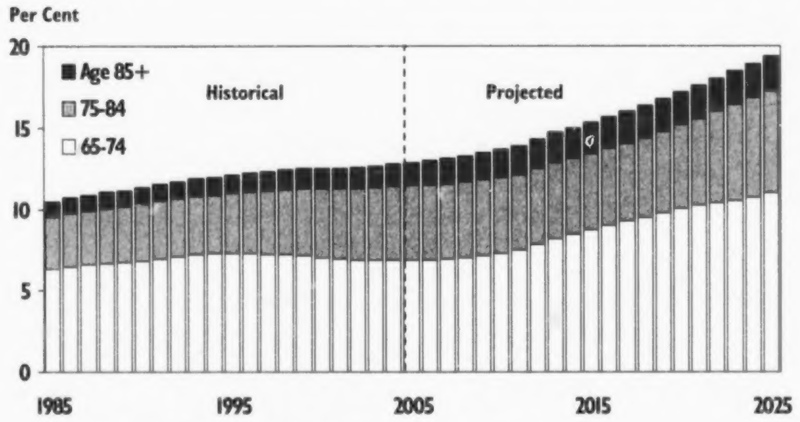
Seniors group to grow fastest

The seniors age group is projected to grow fastest and increase by 88.4 per cent, from 1.61 million to 3.04 million in 2025. The share of seniors in the population is projected to increase from 12.9 per cent in 2005 to 19.4 per cent in 2025. The number of people in the oldest age groups (75+) is also projected to grow rapidly (see Appendix 1B).

During the first decade of the projections, the annual growth rate of the seniors population is projected to rise from 2.2 per cent in 2005-06 to a peak of 4.1 per cent in 2011-12. It is projected to remain above three per cent annually for the rest of the projection period, a rate of growth about three times that of the total population.

The number and share of seniors are projected to continue to rise beyond the time period of this long-term report as the last cohorts of baby boomers move into this age group and life expectancy continues to increase.

Share of Population in Older Age Groups



Sources: Statistics Canada, 1985-2004, and Ontario Ministry of Finance projections.

Aging Population Will Cause Dependency to Rise

Dependency ratio to rise

The total dependency ratio is projected to rise from 45 people in dependent age groups for every 100 individuals of core working age in 2005 to 54 by 2025.

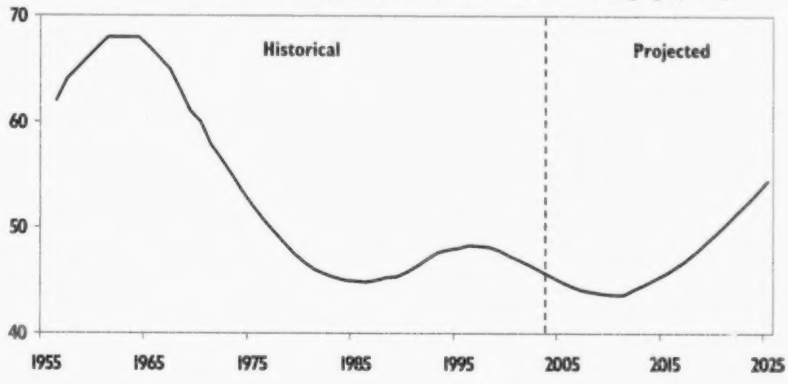
The total dependency ratio is a conventional measure of age-dependency, showing how many people aged 0-14 and 65+ (the dependent population) there are for every person in the core working-age group of ages 15-64. It is generally interpreted as a rough indicator of the ability of a population to support itself.

In the early 1960s, the dependency ratio reached a peak of 68 people in dependent age groups for every 100 individuals of core working age. Today, the ratio is much lower at 45, similar to that of the early 1980s.

In the 1960s, the high share of children in the population was the reason behind the high dependency ratio. Over the next 20 years, however, the rising dependency ratio will be driven by the increasing share of seniors. Since per-capita government spending (including health care and pensions) on the elderly for Canada is estimated to be two to three times that spent on children, the higher dependency ratio in the future is likely to generate growing fiscal pressure on governments.

However, the total dependency ratio cannot be treated as an exact predictor of the fiscal pressures resulting from population aging, since not all core working-age people are active in the labour force, not all seniors are retired, and not all income is earned from employment sources.

Total Dependency Ratio



Sources: Statistics Canada, 1956-2004, and Ontario Ministry of Finance projections.

Can Population Aging Be Avoided?

It would take much higher immigration and fertility rates to significantly change the underlying age structure and offset the shift to an older age structure.

Extreme scenarios of fertility and immigration

If the total fertility rate jumped from the rate of 1.5 children per woman used in the base-case scenario to the population-replacement level of 2.1, the immediate result would be a jump in the annual number of births from current levels of about 130,000 to almost 185,000, rising to more than 215,000 births annually by 2025. All of these extra births would have barely begun to affect the working-age population by 2025. However, the core working-age group of ages 15-64 would have about 306,000 more people than in the base-case scenario. With more children, the share of seniors, at 18.1 per cent, would be lower than in the base case.

Raising the annual immigration assumption from 125,000 to 300,000 for the next two decades provides an indication of the extreme levels of immigration required to significantly slow the aging of the population. Seniors' share of population in 2025 would still rise significantly over 2005: 16.4 per cent of the population compared to 12.9 per cent in 2005, but below the 19.5 per cent share in the base-case scenario. In this high immigration scenario, the population would be 4.3 million higher than in the base-case scenario. All age groups would grow much more rapidly; in particular, the core working-age group.

Population Aging Not Unique to Ontario or Canada

Italy and Japan currently have the highest proportion of seniors in their populations among large developed economies at almost 20 per cent.

In general, Ontario's and Canada's populations as well as that of the United States are relatively young compared to those of Japan and Europe. Ontario's population, however, is projected to age faster than that of the United States, mainly because of a lower fertility rate.

Many Organization for Economic Co-operation and Development (OECD) countries have introduced policy measures to respond to population aging, including measures aimed at increasing labour-force participation of older workers, such as:

- removing work disincentives for older workers;
- strengthening work incentives in pension plans;
- improving the flexibility of the work-retirement transition; and
- increasing employability of older workers.

SECTION II: IMPLICATIONS OF THE DEMOGRAPHIC OUTLOOK

Wide-ranging implications

Population growth, population aging and distribution of population growth across Ontario each have multiple and wide-ranging social and economic implications. This section focuses on five key economic and fiscal implications related to the demographic trends discussed in the previous section:

1. The aging population and slower growth of the core working-age group will slow growth in Ontario's labour force, which may lead to a slower rate of real gross domestic product (GDP) growth.
2. The changing composition of personal income and anticipated shifts in consumption patterns as the population ages could moderate growth in government tax revenues.
3. Population growth and population aging will put continuing pressure on health care spending.
4. The slower growth in the number of children and youth may ease pressures on education spending.
5. The concentration of population growth in urban regions will result in increasing demand for urban infrastructure.

Overall, population aging and slower growth in the core working-age population will put greater pressure on the government's balance sheet.

1. Slowing Labour-Force Growth May Slow Economic Growth

Slowing labour-force growth

Labour-force growth will slow with population aging and slower growth in the core working-age population. As discussed in Chapter 2, slower growth in the labour force may slow the overall rate of Ontario's real GDP growth over the projection period.

Population aging contributes to slower labour-force growth because participation rates for older age groups are significantly lower than for younger age groups. While the recent trend of increasing participation rates for seniors is expected to continue, the impact of such increases is unlikely to fully counter the downward impact of population aging on labour supply.

As baby boomers age, the annual number of people turning age 65 is projected to become higher than the number of entrants into the core working-age group (people turning age 15) by 2017-18. Thereafter, the core working-age group is still projected to grow, due to net migration gains, but at a much slower pace.

Immigration key to labour-force growth

As immigration is a key component of net migration, its importance as a source of growth in the working-age population will grow. As the population ages and fertility rates remain low, new Canadians may be the only source of net labour-force growth within the next decade.

Improving the integration of new Canadians, as well as encouraging the broadest labour-force participation of the working-age population, including older workers, will be increasingly important.

2. Population Aging to Affect Taxation Revenue

Population aging will have an impact on average incomes, wealth, spending, and the types and amount of taxes that people pay.

Composition of income shifts

As people retire, the composition of their income shifts from employment earnings to pension and investment income. Their consumption patterns also change to reflect new circumstances in different stages of life. As older people become a growing segment of the population, the mix of goods and services produced may also shift from one that primarily meets the demands of families with children and younger persons to one that caters increasingly to the needs of older people. It is anticipated that as baby boomers age, they may continue to spend a higher percentage of their income on goods and services compared to seniors from previous generations.

If past trends are an indication, the accumulation of assets and investments may result in a rise in the wealth of seniors through the projection period. For example, the real median net worth (assets less debts) of elderly families in Canada increased 42 per cent between 1984 and 1999, while the real median net worth of individual seniors increased by 69 per cent over the same period.

Given the potential revenue implications of the anticipated demographic changes over the next two decades, more research on the subject can be expected in coming years.

The base-case scenario of this long-term report projects that Ontario's overall personal income tax (PIT) revenue will continue to rise. However, if the impact of demographics is isolated, then analysis suggests that Ontario's personal income taxes paid per tax filer could decline. Demographic trends over the next 20 years could also slow the growth in payroll tax revenues such as Ontario's employer health tax (EHT) and potentially exert downward pressure on Ontario's retail sales tax (RST) revenues.

Further background information on how sources of income, composition of spending and globalization could affect tax revenue can be found in Appendix 6A.

3. Continuing Pressure on Health Spending

Demographics will continue to be one of the key drivers of growth in health care spending. The impact of demographics on the growth of provincial health care spending includes both population growth of 3.1 million and the increasing share of seniors in the population over the projection period.

Health spending on seniors higher

Per-capita provincial government health spending for seniors is over three times higher than the average for the population as a whole. According to the latest data available, seniors (with about a 13 per cent share of population) accounted for about 43 per cent of provincial health care spending in 2002. Per-capita health costs for older seniors (ages 85+) are even higher. Therefore, aging, combined with population growth, will continue to put pressure on health spending.

In Chapters 4 and 6, provincial government spending on health is projected to rise by an average of 6.0 per cent annually over the 2009-10 to 2024-25 period, with 2.2 per cent attributed to population growth and aging together. Population aging will account for half of the demographic impact. Other factors affecting the growth in health care spending in the base case are utilization increases (assumed at 1.5 per cent annual growth) and inflation (2.2 per cent annual growth).

4. Easing Pressure on Education Spending

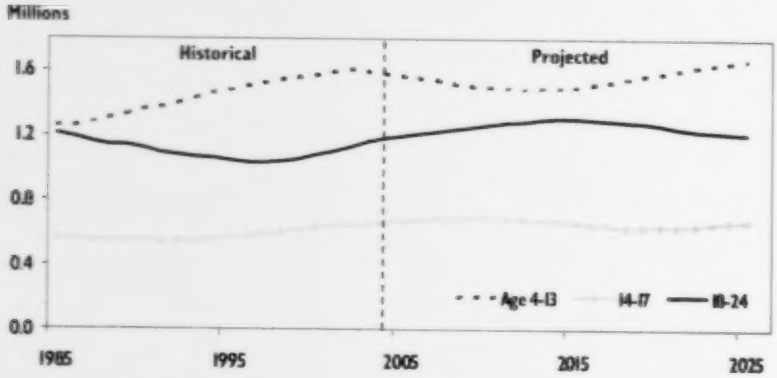
Number of children to grow slowly

The number of children in Ontario is projected to continue to grow very slowly over the next 20 years. The elementary school-age group (4-13) is projected to experience a small decline of five per cent to 2012 as the large cohorts of the baby boom echo move out of this age group. From 2012 to 2025, the number of elementary school-age children is projected to rise by about 0.9 per cent annually on average, compared to average annual increases of 1.1 per cent over the last 20 years. This age group is projected to grow from 1.58 million in 2005 to 1.67 million in 2025.

The secondary school-age group (14-17) is projected to grow to 2010 and then to decline by about nine per cent over the next nine years before resuming slow growth to reach 668,000 by 2025, slightly lower than today's level of 671,000.

The 18-24 age group, the main-source population for postsecondary education, is projected to grow until 2014 and peak at a level nine per cent higher than today. Subsequently, a gradual decline is projected up to 2025 to levels slightly higher than today. Growth in this age group will resume again after 2025.

Elementary, Secondary and Postsecondary Source Population



Sources: Statistics Canada, 1985-2004, and Ontario Ministry of Finance projections.

Upward trend in postsecondary participation

The number of children aged 4 to 17 is the major driver of elementary- and secondary-school enrolments. However, the number of young people aged 18 to 24 is only one determinant of enrolments in postsecondary education since not all people in this age group attend postsecondary institutions. Future postsecondary enrolment levels should also continue to be influenced by the upward trend in postsecondary education participation rates, reflecting the growing importance of postsecondary education attainment and lifelong learning.

Overall, the slower growth in the number of children and youth may ease the pressure on education spending.

With the aging of the workforce and constantly changing requirements of the economy, lifelong learning for adults will become a key element of Ontario's effort to ensure that individuals have the skills they need. While governments will provide financial and institutional support to individuals acquiring initial skills and qualifications, increasing demands for lifelong learning may not necessarily translate into rising costs for the public sector. Lifelong learning costs will be shared by employers and not-for-profits active in the training and retraining of their employees and by individual learners themselves.

In the base case of this long-term report, provincial government spending on elementary, secondary and postsecondary education is projected to rise 3.4 per cent on average annually over the 2009-10 to 2024-25 period, with a 0.2 per cent contribution from demographics, 1.0 per cent from increased utilization and 2.2 per cent from inflation.

5. Increasing Demand for Urban Infrastructure

The extent and regional distribution of population growth will affect the type of infrastructure needed in different parts of the province, from highways to transit to water to electricity to schools.

Urbanization increases need for infrastructure

Population growth of more than 3.1 million people in Ontario over the next two decades will by itself increase the demand for infrastructure. The regional distribution of growth is projected to occur overwhelmingly in the already more densely populated GTA and other large urban centres of the province.

The GTA is part of a larger geographic area, the Greater Golden Horseshoe (GGH), which encompasses the GTA and a large part of Central Ontario including Peterborough, Waterloo, Niagara and Simcoe. The GGH is among the fastest-growing regions in Canada and North America.

In addition to regional patterns of population growth, the rapidly growing number of seniors will influence the demand for certain types of public infrastructure such as residential care facilities.

CONCLUSION

This chapter looked at the five key trends of the demographic outlook: slowing but still robust population growth; population growth driven by immigration; concentration of population growth in urban regions; slowing growth in the core working-age population; and a major shift to an older age structure.

This chapter also reviewed five key economic and fiscal implications of the demographic outlook. Overall, population aging and slower growth in the core working-age population will put greater pressure on the government's balance sheet.

APPENDIX 1A: THE BABY BOOM GENERATION

The baby boom generation, born between 1946 and 1965, has shaped the age structure of Ontario's population. At the height of the baby boom around 1960, almost 160,000 babies were born every year in Ontario, more births than there have been ever since. This is much higher than today's 130,000 annual births for a population that is now twice as large.

The large cohorts of children over the 1950s, 1960s and 1970s entered working age over the 1965 to 1985 period, swelling the labour force. By the mid-1980s, baby boomers were in their twenties and thirties. As the larger cohorts of baby boomers passed through their peak reproductive years over the 1980s and early 1990s, there was an increase in the number of births, popularly known as the baby boom echo.

Today, baby boomers are in their forties and fifties and represent about 30 per cent of the population of Ontario and 43 per cent of the core working-age population. Starting in 2011, they will begin to turn age 65. By 2031, all baby boomers will be seniors.

APPENDIX 1B: THE OLDEST SENIORS

Seniors are living longer and longer, so the number of people in the oldest age groups is also growing rapidly.

In 1985, 384,000 people were aged 75+ in Ontario, representing 4.1 per cent of the population. By 2005, 6 per cent of the population belonged to this age group.

By 2025, 1.32 million people in Ontario are projected to be aged 75+ (8.4 per cent of the population). The share of the 85+ age group is also projected to rise rapidly, from 1.4 per cent in 2005 to 2.1 per cent in 2025.

2 A LONG-TERM PROJECTION OF ONTARIO'S ECONOMIC GROWTH

INTRODUCTION

Base-case projection presented

This chapter provides a base-case projection of Ontario's macroeconomic growth as well as high and low growth scenarios based on different assumptions about productivity growth. It is not a forecast but rather an exercise in taking a plausible set of assumptions about Ontario's potential and adding up their consequences for Ontario's economic growth.[1] These assumptions form the basis for projecting government revenue, which in turn underlies the long-term fiscal outlook in Chapter 6.

Highlights of the Long-Term Projection: Base-Case Scenario

	Historical	**Projection**			
(Per cent, average annual rate)	**1982-2004**	**2005-09**	**2010-14**	**2015-19**	**2020-25**
Real GDP Growth	3.0	2.9	3.0	2.6	2.3
Real GDP per Capita Growth	1.5	1.6	1.8	1.5	1.3
Unemployment Rate, % *	7.8	6.4	5.6	4.8	4.1

*** The 2020-25 column shows only the end-of-period unemployment rate.**

This chapter's macroeconomic projection does not attempt to predict cyclical fluctuations in demand or the impact of individual extreme positive or negative events. Booms and downturns will inevitably occur in the future. The projection shows what the economy would be like when growth is averaged over the long term.

The base-case projection assumes, most importantly, no changes in current public policy. This assumption is not meant to suggest that policy will not change, but that the long-term projections cannot take into account what government policy may be.

Section I sets out the key elements of the base-case projection and what it means for growth in incomes. Section II presents alternative scenarios with higher and lower growth assumptions.

Fundamental determinants examined

Section III examines the two fundamental determinants of long-term growth: labour supply and productivity. Section IV examines the four key factors external to Ontario that affect the economic projection, including the performance of the U.S. economy, oil prices, the exchange rate, as well as inflation and interest rates. Over the long run, these factors are expected to influence the composition of the economy rather than its total size.

Section V discusses three key structural factors that, while not explicitly modelled, are expected to shape the industrial makeup of Ontario's economy: technological change, changing trade patterns and globalization of financial markets. Section VI examines the role of infrastructure as a requirement for economic growth. Appendix 2A considers the composition of Ontario's economy in 2025.

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[1] Long-term forecasts of the Ontario economy are regularly produced by the Conference Board of Canada, Informetrica Limited, and the Policy and Economic Analysis Program at the University of Toronto. A table comparing the base-case projection in this report to these forecasts is found in Appendix 2C.

SECTION I: ONTARIO'S LONG-TERM ECONOMIC GROWTH PROJECTION

This section sets out the base-case projection of Ontario's macroeconomic growth. The following table shows the main highlights of the projections. The details are presented in Appendix 2B.

Ontario Key Economic Variables, Base-Case Scenario

	Actual (Average)				Projection (Average)			
	1982-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-25
Real GDP Growth	3.9	0.4	4.3	3.0	2.9	3.0	2.6	2.3
Real GDP per Capita Growth	2.2	-1.0	3.0	1.6	1.6	1.8	1.5	1.3
Real GDP per Employee Growth	1.5	1.1	1.9	0.7	1.2	1.5	1.3	1.4
Labour-Force Growth	2.2	0.3	1.6	2.4	1.5	1.2	1.0	0.9
Employment Growth	2.4	-0.7	2.4	2.3	1.7	1.4	1.3	0.9
Unemployment Rate*	7.5	9.5	8.0	6.6	6.4	5.6	4.8	4.1
CPI Inflation	5.7	2.4	1.7	2.5	1.9	1.8	2.0	2.1

* The 2020-25 column shows only end-of-period unemployment rate.

Slower labour-force growth

Ontario's labour force and total employment are projected to grow at a slowing pace over the next two decades. By the final five years of the projection period, both the labour force and employment are projected to grow at an annual rate of 0.9 per cent, compared to annual growth of over two per cent in the most recent five-year period. This is primarily the result of the slower rate of population growth projected in the first chapter.

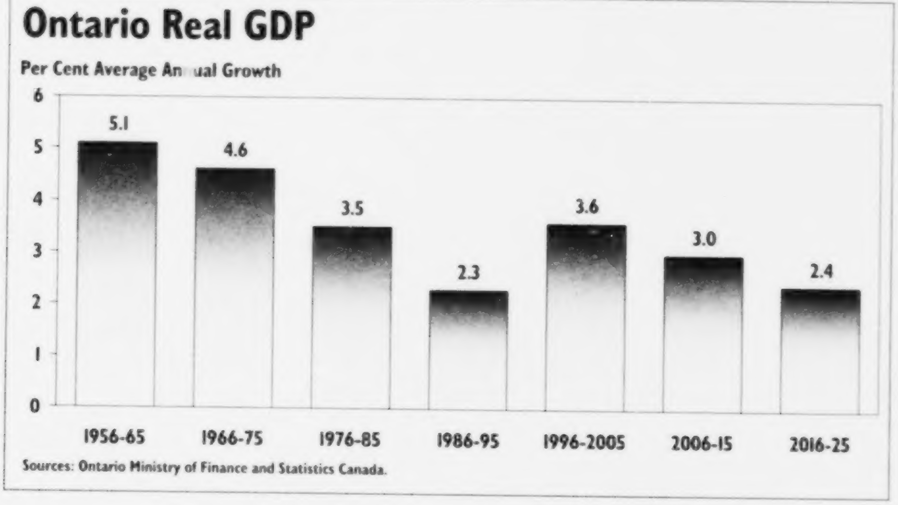
The unemployment rate is projected to decline to 4.1 per cent by 2025. Well below current levels, this is expected to result primarily from the older age structure and rising education level of the labour force. This means that the economy can maintain a lower unemployment rate without putting upward pressure on inflation. The lower unemployment rate partly offsets the projected slower rate of labour-force growth.

Inflation in the projection is tied to the existing Bank of Canada two per cent target. The Bank has maintained this target with considerable success for over a decade, which has contributed to macroeconomic growth and stability in Canada.

GDP per person to increase steadily

Ontario's real gross domestic product (GDP) growth is expected to remain positive, though slowing, as a result of much slower growth in the labour force. However, as a result of productivity growth, the rate of increase in real GDP per person is expected to remain relatively steady.

The chart on the next page shows decade-long averages in total Ontario real GDP growth over the last 50 years and the 20 years projected in this report. Average growth trended down from five per cent over 1955-65 to just over two per cent over 1985-95. Following the downturn of the early 1990s, growth rebounded and the average for 1995-2005 was similar to that of the 1975-85 period.



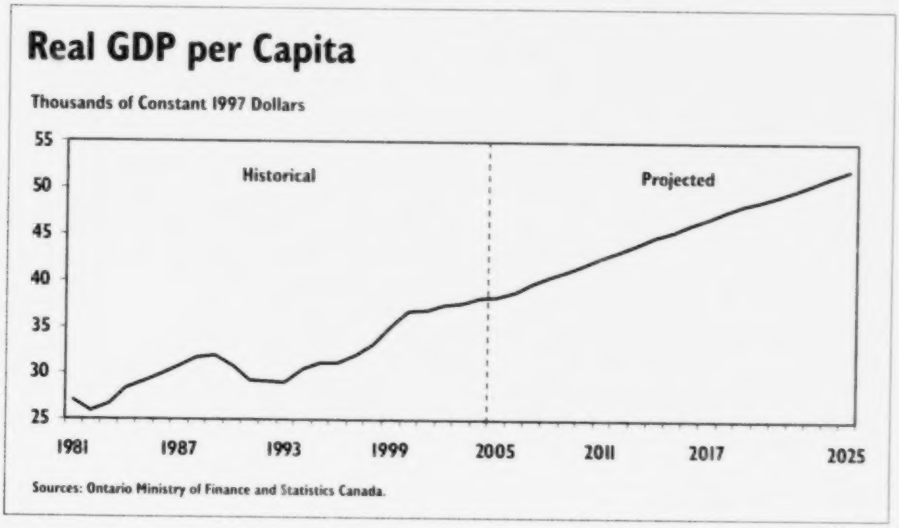
Ontario Real GDP

Per Cent Average Annual Growth

Sources: Ontario Ministry of Finance and Statistics Canada.

Real income rising

Ultimately, the focus on future economic growth is relevant due to its effect on the future prosperity of Ontario's citizens. The implication of productivity growth is that real GDP per capita can maintain a steady rate of increase in spite of slowing labour-force growth. It is also projected that there will be some modest increases in the employment rate. Taken together, this implies a steady rate of increase in the real income received by individuals. The chart below shows that real GDP per person is projected to rise to about $52,000 (constant 1997 dollars) by 2025 compared to $38,000 in 2004.



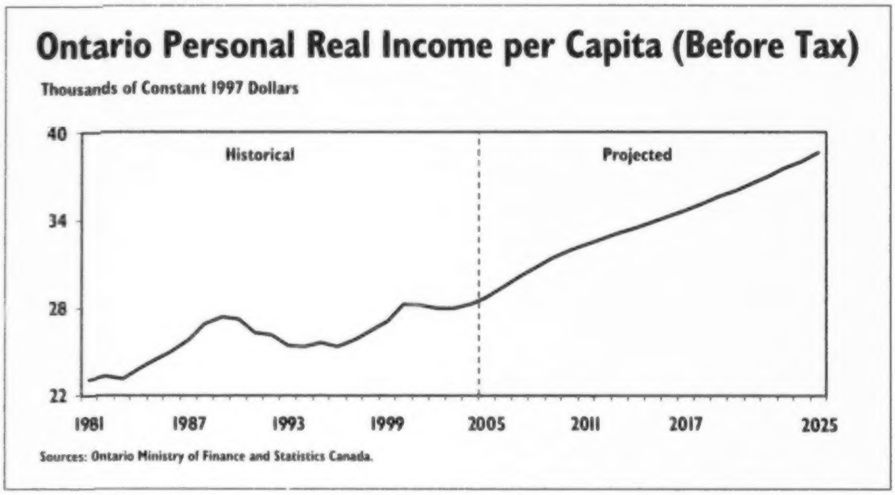
Real GDP per Capita

Thousands of Constant 1997 Dollars

Sources: Ontario Ministry of Finance and Statistics Canada.

Moderate interest rate increase

Personal income is defined as the income that goes directly into the hands of individuals. It consists of wages, salaries, pensions, social benefit payments, interest and dividend income, plus profits earned in unincorporated businesses. Personal income has grown considerably more slowly than overall GDP since the early 1990s for a number of reasons, but especially because of the large decline in interest rates, which has cut into the interest income received by individuals. Interest rates are likely to increase moderately in the next few years, and then stabilize. This is expected to reduce the gap between personal income growth and GDP growth.



Sources: Ontario Ministry of Finance and Statistics Canada.

Savings rate rises

The personal savings rates, which is the ratio of savings to disposable income, is assumed to rise back from a recent annual low point of 2.7 per cent in 2004, settling into a range of three to four per cent. This assumption would mean that household finances would be on a stable basis. However, the amount of investment undertaken in an open economy like that of Ontario does not depend significantly on the savings of households. This is because international financial markets are highly open and capital flows to profitable opportunities without regard to where the savings are from.

SECTION II: ALTERNATIVE SCENARIOS OF ECONOMIC GROWTH

This section describes alternative scenarios for economic growth, based on alternative paths for productivity. It provides an explanation of why productivity growth might be higher or lower than has been assumed in the base-case economic projection. Details of the high and low economic growth scenarios are provided in Appendix 2B.

High Growth Scenario

Higher investment leads to productivity growth

In the high growth scenario, a path of higher investment and greater payoffs from technological progress leads to productivity growth that is, on average, 0.3 per cent per year higher than in the base case over the 2010-25 projection period.

As was noted, the base case assumes that productivity growth is only slightly higher than it was over the previous 20 years, relatively low by historical standards.

By contrast, there is considerably greater optimism among some economic forecasters, particularly in the United States. They argue that the economy takes a long time to fully absorb the benefit from major new technological developments, such as the Internet. On those grounds, it could be argued that productivity growth over the coming decades will be considerably higher than it has been in the past.

Faster population growth

Stronger economic growth would also make Ontario a more attractive location for people from other countries and other provinces. This would raise both the productive capacity of the economy and the requirement for health, education and other public services.

Moreover, the trend of the past two decades has seen employment in advanced countries shift from labour-intensive to knowledge-based industries. Ontario is well positioned to capitalize on this trend, as it has a higher proportion of postsecondary graduates in its workforce than any country. Ontario also has a very well developed electronic communications infrastructure, making this a very convenient location for many types of high value-added service activities geared to a global market.

Stronger economic growth would lead to higher government revenue growth, making possible even greater government investment in training and education, thereby reinforcing Ontario's strengths in that area.

Low Growth Scenario

Declining competitiveness would mean slower growth

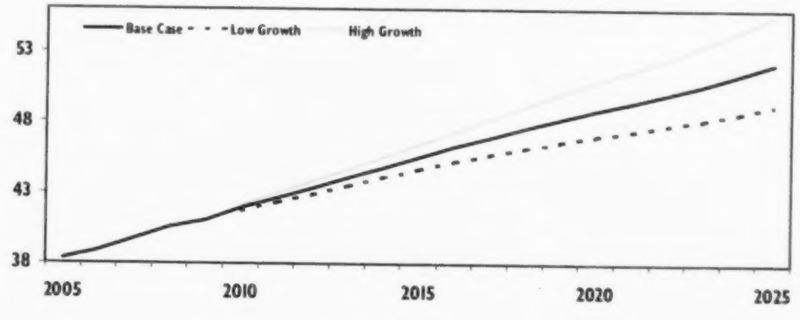
If Ontario's economy is less successful in making the changes needed to face growing international competition, more aggressive external competition could leave Ontario without good replacements for the industries that decline. Average wages would be lower, resulting in weaker growth in real income.

Weaker economic growth would make Ontario less attractive to people from other countries and other parts of Canada. This would also curb growth of the economy's productive capacity while lowering demand for privately produced goods and services, notably housing, and for some of the services provided by government, such as health care and education. Weaker economic growth would also put pressure on social services.

The alternative scenarios depicted in this report form a fairly narrow band around the base case. Average productivity growth is about 0.3 per cent lower or higher than in the base case, but this is enough to result in a substantial difference in the level of per-capita real income by the end of the projection period. As will be seen in the fiscal analysis in Chapter 6, it would also make a very substantial difference to the fiscal position of the Ontario economy.

Three Scenarios of Real GDP per Capita

Thousands of Constant 1997 Dollars



Sources: Ontario Ministry of Finance and Statistics Canada.

SECTION III: THE DRIVERS OF ONTARIO ECONOMIC GROWTH

The fundamental determinants of long-run economic growth are the supply of workers and the growth in their productivity. Both of these factors are discussed in more detail in Chapters 1 and 3, but this chapter will link them together to provide the result in overall growth in real GDP. (GDP is the total volume of goods and services produced in the economy.)

In this report, productivity is measured as real GDP per hour worked. Therefore, real GDP growth will be the sum of the growth in productivity, the growth in the number of people employed and the growth in the average number of hours worked per year by those who are employed. It is assumed that, over the long run, cyclical fluctuations in employment will average out so that the growth in employment is about equal to the growth in the labour force.

Key Determinants of Long-Run Economic Growth

Components	Assumptions
Labour-Force Growth	Average increase of 1.4 per cent per year, 2006 to 2015, and 0.9 per cent per year from 2016 to 2025; compared to 2.1 per cent per year from 1996 to 2005.
Unemployment Rate Consistent with Stable Inflation	Declines to about 4 per cent by 2025, compared to about 6 per cent in the 1990s.
Ontario Productivity Growth	Growth averages about 1.3 per cent, 0.1 per cent per year higher than the average of the past 20 years.

1. Labour Supply and the Labour-Force Participation Rate

This section outlines the assumptions for labour supply that were used to develop the macroeconomic growth projection. Total labour supply in the economy depends on the working-age population and the percentage of those who choose to be in the labour force.

87 per cent of those aged 25-44 in labour force

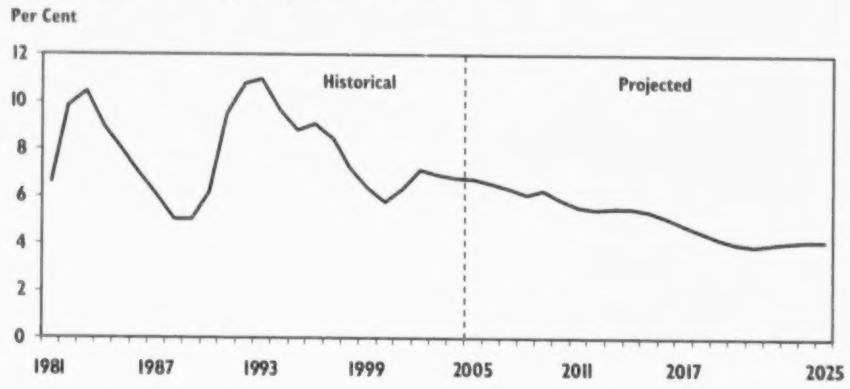
The labour-force participation rate is defined as the percentage of people who are ready and willing to work out of the available population. This includes both those looking for work as well as those already employed. This varies by age and sex and is highest for people in the 25-44 age group. In recent years in Ontario, about 87 per cent of the people in this age group have been in the labour force.

It is assumed that in the future the percentage of older people, particularly those over age 65, who continue to work will be higher than in the 1990s. More older people have had careers as knowledge workers rather than manual workers, giving them greater potential for a longer attachment to the labour force due to less physically demanding jobs. As more of the population approaches age 65, employers are likely to adopt flexible work practices, such as greater opportunities for part-time employment, to entice some of their staff to remain in the labour force. As well, the Ontario Government has introduced legislation to abolish mandatory retirement.

Baby boomers become seniors

However, as discussed in Chapter 1, the dominant trend is likely to be a declining rate of growth of the core working-age population. This reflects the relatively low birth rates in Ontario in the 1980s and 1990s, and the passage of the baby boom generation into the senior age group. The overall result is likely to be labour-force growth considerably lower than in the past.

Ontario Unemployment Rate



Sources: Ontario Ministry of Finance and Statistics Canada.

Older people have lower unemployment

Older people tend to have lower unemployment rates than young people, who are exploring their alternatives and change jobs more frequently. For example, in the last few years (2000-04), the average unemployment rate among youth in Ontario has been about 17 per cent, while for individuals over age 45, it has averaged about 4.5 per cent. As older workers are expected to represent a larger share of the labour force, the potential sustainable rate of unemployment that is compatible with steady inflation is expected to decline.[2] In addition, the lower overall labour-force growth and stable macroeconomic environment is expected to lead to lower unemployment. The unemployment rate is projected to decline from 6.8 per cent in 2004, to 5.9 per cent in 2010 and 4.1 per cent in 2025.

Rising service-sector share

Increasingly, the growth of output in advanced countries is expected to be in service areas that require highly educated workers. Ontario is well positioned for such a trend because it has a very high rate of participation in postsecondary education. As knowledge and skill levels rise in the economy, the average output per worker (and thus average productivity in the economy) is expected to rise.

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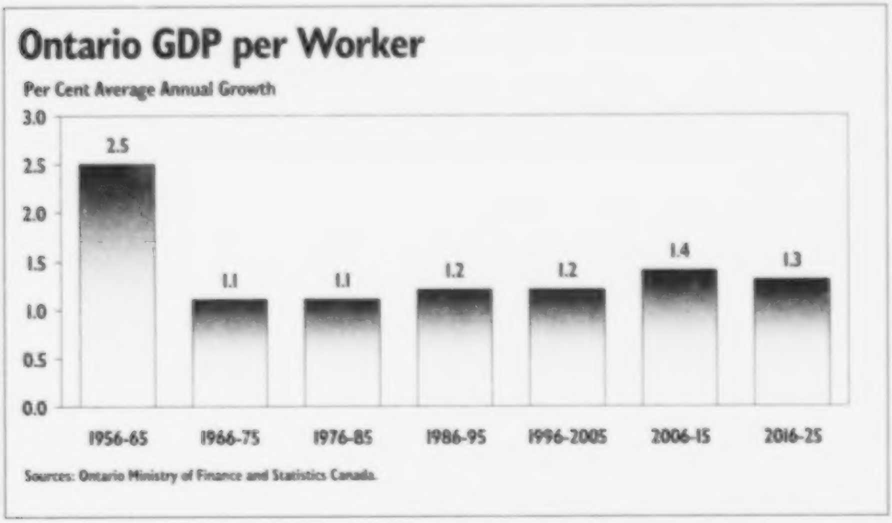
[2] For a discussion of the effects of aging on the unemployment rate, see R. Horn and P. Heap, "The Age Adjusted Unemployment Rate," *Challenge*, November-December 1998. More educational attainment tends to reduce the unemployment rate. See "Age and Education Effects on the Unemployment Rate," Federal Reserve Bank of San Francisco Economic Letter, July 15, 2005.

2. Productivity and Investment

Overall economic growth depends on both labour-force and productivity growth. This section will briefly examine the factors affecting productivity growth and the productivity assumptions that were used to develop the base-case macroeconomic growth projection as well as the high and low growth scenarios.



Ontario GDP per Worker

Sources: Ontario Ministry of Finance and Statistics Canada.

Much year-to-year volatility

The chart above shows average annual growth rates in real GDP per worker, averaged over periods of 10 years. Following growth of 2.5 per cent annually in the 10 years ending in 1965, average annual productivity growth in following periods ranged in a narrow band of 1.1 to 1.2 per cent. There were a number of major disturbances, some global and some unique to Ontario, which may have contributed to lower growth in more recent periods.[3] Within the decade-long averages, there was a great deal of year-to-year volatility depending on events in the business cycle and utilization of the workforce and capital stock.

In the five-year period ending in 2005, average productivity growth is estimated to have been considerably lower than the historical average, at only 0.4 per cent per year. This was the result of a series of shocks to the economy, and it would be excessively pessimistic to extrapolate it forward as the likely future rate of growth.

Investment to raise productivity

Productivity growth results from a combination of factors: technological change, investment in capital equipment, and growth in skills and knowledge. A more in-depth discussion of the factors underlying productivity growth is contained in Chapter 3. An important factor favouring stronger productivity growth is an expected faster rate of increase in the capital/labour ratio in the economy. Projected investment is expected to result in the stock of capital growing more rapidly than the labour force.

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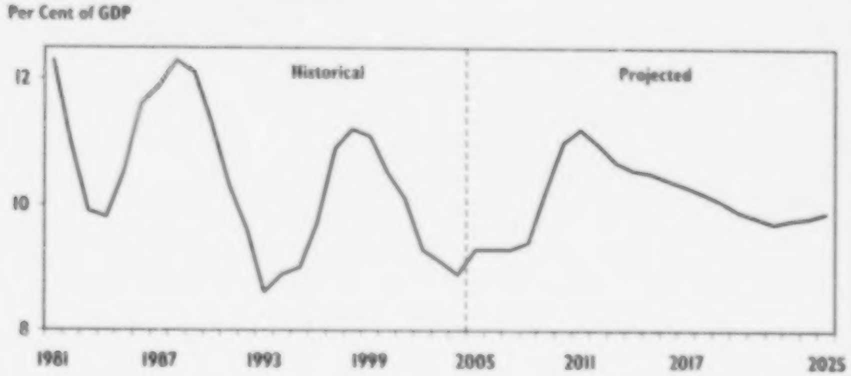
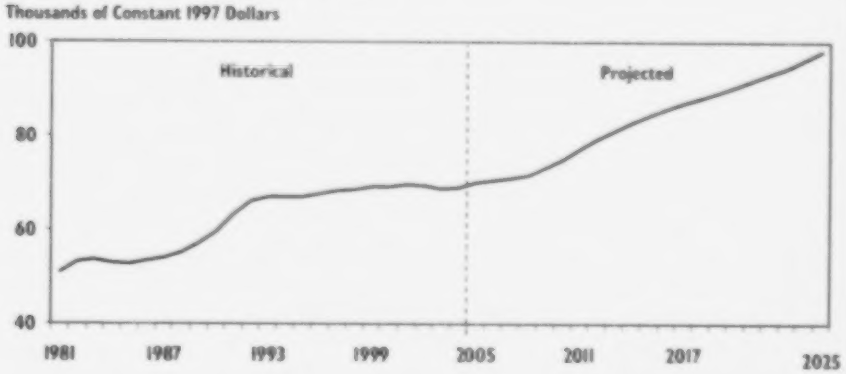
[3] The widely recognized productivity growth slowdown that began in the mid-1970s makes it important in the context of a long-term report to look at productivity over a longer time frame than is employed elsewhere in this report.



Business Investment

Sources: Ontario Ministry of Finance and Statistics Canada.

Real investment in machinery and equipment over the next two decades is projected to grow by about 4.0 per cent annually compared to a projected average annual growth of the labour force of 1.2 per cent. This contributes, along with real investment in commercial and industrial structures, to a projected increase of 40 per cent in the amount of capital that each worker has to work with.



Capital Stock per Worker

Sources: Ontario Ministry of Finance and Statistics Canada.

Sustained productivity growth expected

For the base case, a cautiously optimistic viewpoint has been adopted. This assumes that average productivity growth over the next 20 years will be just over 1.3 per cent, slightly higher than the average of the past few decades. Ontario is highly integrated with the global economy and will share in the technological advances that are expected to increase productivity worldwide.

While 1.3 per cent may not appear to be a very rapid rate of productivity growth, it compounds over a 20-year period to produce a very substantial 36 per cent increase in the level of real GDP per person.

SECTION IV: EXTERNAL FACTORS AFFECTING THE ONTARIO ECONOMY

The overall pace of economic growth, discussed in the previous section, depends on growth in labour supply and productivity. This section discusses the largely external factors that affect the composition of demand. These include the performance of the U.S. economy; oil prices; the Canada-U.S. exchange rate; and interest rates. Large changes in any of these factors can have a substantial, but usually temporary, impact on Ontario economic growth.

This section also discusses inflation though, for Ontario, this is largely determined by the policies of the Bank of Canada.

1. The U.S. Economy

U.S. is Ontario's largest trading partner

The health and growth of the Ontario economy depend to a large extent on economic activity in the United States. The United States is Ontario's largest trading partner. The United States purchases about two-thirds of Ontario's total exports,[4] equivalent to about 40 per cent of Ontario's GDP. The economic projection assumes that the U.S. economy will continue to be a steady source of demand for Ontario's exports. The United States is expected to remain Ontario's primary trading partner over the next 20 years, in spite of continued rapid growth of demand from China and India.

Assumptions Overview: Key External Factors

Components	Assumptions
Inflation	Bank of Canada maintains target of keeping inflation near two per cent.
Interest Rates	Interest rates rise from recent unusually low values, but remain much lower than the average of the past 20 years.
Canadian Dollar	Rises slowly from current level to 87 cents US.
Oil Price	Declines slightly from recent peak, to about $50 US, and thereafter tracks inflation rate.
U.S. Economy	Current deficit problems are solved without a financial crisis. Productivity growth is 0.3 per cent higher than the average of the past 20 years.

There are some major short-term challenges facing the U.S. economy, including very large deficits in the federal budget and in the international balance of payments. However, the United States is the world's leading economic power, and it is reasonable to believe that it will continue to have good access to international credit, so that the deficit problems can be resolved gradually without a major disturbance to economic growth.

More rapid economic growth in U.S.

The projection in this report assumes that the United States will have a more rapid rate of economic growth than Canada over the next 20 years. There are two reasons for this. The first is the demographic trend, which implies that the United States is expected to have a higher labour-force growth rate than Canada due to its higher birth rates. The second is the assumption of higher productivity growth rates for the future made by U.S. long-term forecasters, who are optimistically extrapolating from the relatively high growth rates of recent years. The United States has generally exhibited very strong economic and productivity growth over the past 10 years, driven particularly by advancing technology. The projection in this report assumes U.S. productivity growth will be 0.3 percentage points higher than the average of the past 20 years.

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[4] Ontario's exports include both international exports and exports to other provinces. The United States buys more than 90 per cent of Ontario's international exports.

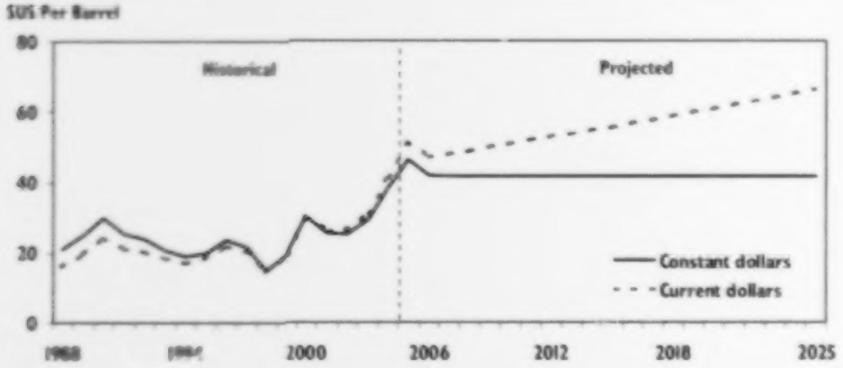
2. Oil Prices

Oil prices affect growth

Oil prices can have a significant impact on Ontario's economic growth. A high oil price is a negative factor for Ontario's economy, a net importer of oil and natural gas, but it is a positive for other provinces that are exporters of energy. Higher world oil prices also have a negative impact on the U.S. economy, dampening demand for Ontario's exports.

The negative impact is somewhat mitigated because Ontario exports services and manufactured goods to oil-producing provinces, and the demand for these exports rises as a result of their stronger growth.

Crude Oil Price



Sources: sproule.com and Ministry of Finance.

There are strongly opposing views about the future trend of oil prices by experts in this field. Some argue that the world is running out of oil, and that demand from newly industrializing countries such as China will push the price to $100 per barrel. Others argue that demand does not fall greatly in the short run, but that high prices eventually elicit substitution and conservation, as well as new sources of supply (such as the synthetic crude oil from the tar sands in western Canada). Past experience has shown that when there have been oil price spikes to very high levels, which have lasted a few years, this has been followed by much lower oil prices.

Oil prices well above historical average

The base-case projection adopts a conservative assumption of real oil prices: continuing at well above the historical average value. This allows for the price to drop slightly from the peak level reached in 2005 to about US$50 per barrel. Thereafter, it is assumed to rise at the same rate as overall inflation, keeping the price constant in real terms,[5] at a level that would be close to double the average of the past 10 years.

While a rising price of oil has a negative short-term impact on the economy, the longer-run impact is more modest, as users adjust by adopting more fuel-efficient technologies.

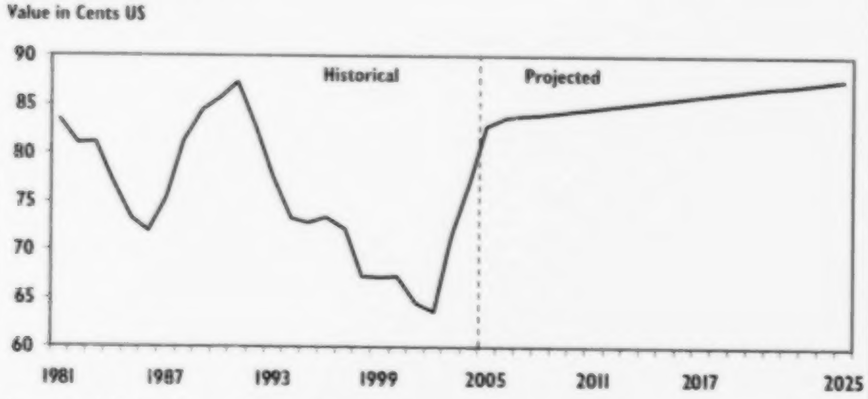
3. The Exchange Rate

Canadian dollar on moderate upward trend

The Canada-U.S. exchange rate is particularly important for Ontario as the United States accounts for by far the largest share of Ontario's exports. Most forecasters expect that the Canadian dollar will remain on a gradual upward trend relative to the U.S. dollar, reflecting the large current account deficit that exists in the United States.

The Canadian dollar has risen sharply in the past few years. The combination of a rising dollar and high commodity prices has had a significant negative effect on the Ontario economy. As a result, Ontario's real GDP growth has been below the Canadian average from 2002 to 2004. The combination of such factors carried into the future would be a risk factor for the Ontario economy.

Canadian Dollar



Sources: Ontario Ministry of Finance and Statistics Canada.

4. Inflation and Interest Rates

Inflation and interest rates are considered together because there are strong linkages between them. First, *nominal* interest rates, the rates actually charged for loans or the current yield of bonds, equal *real* interest rates plus the expected rate of inflation. Second, it is largely real interest rates that are important for encouraging or discouraging real investment. Third, nominal interest rates are a key tool that central banks such as the Bank of Canada employ to encourage or discourage demand growth in the economy.

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[5] This is in dollars of constant purchasing power. The West Texas Intermediate oil price is divided by the U.S. GDP price index (where the year 2000 has a value of 1).

Low inflation supports economic growth

Low and stable inflation allows interest rates to remain low and supports economic growth. Projections of inflation affect the long-term path of both government revenues and expenses. Projections of interest rates determine the cost of financing the public debt.

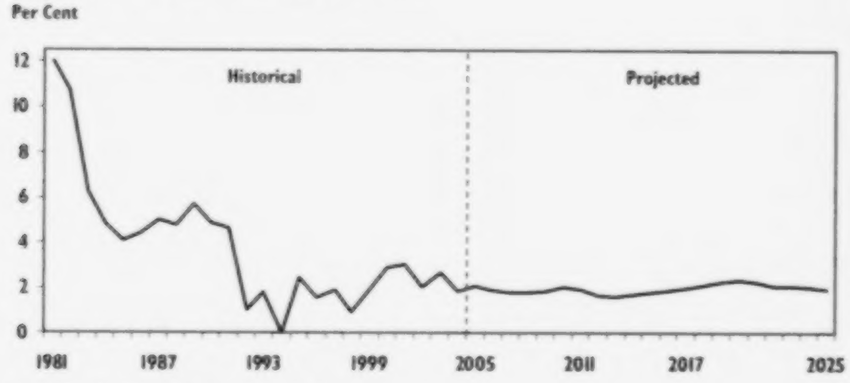
A stable financial environment is vital for economic growth and it is reasonable to assume that this can be achieved in Canada over the coming 20 years.

The Bank of Canada has adopted a target of keeping the inflation rate near the midpoint of its one to three per cent band and this has become well established in the expectations of Canadians. There is widespread support for a policy of inflation targeting by both economists and the general public, and it is reasonable to assume that this policy will continue to be in place for the future.

Pre-emptive monetary policy helps stability

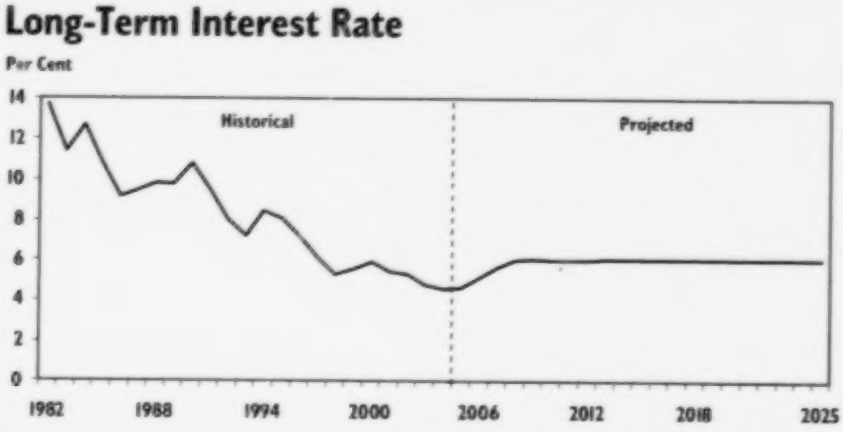
Monetary policy that takes pre-emptive action to maintain inflation within a narrow band is widely credited with increasing the overall stability of economic growth. Past episodes in which inflation was allowed to rise excessively, followed by much tighter policy to bring it down, created deep recessions. Recessions have not been abolished but they are likely to be less frequent and less prolonged with more stable monetary policy.

Ontario CPI Inflation Rate



Sources: Ontario Ministry of Finance and Statistics Canada.

Industrial and supply shocks however, can still lead to cyclical instability. The collapse of the high-tech bubble in 2000 was an example of such an event. This contributed to a slowdown in growth in 2001. Part of the reason why it did not become a deep recession was that, in an environment of low inflation, the central banks were in a position to allow interest rates to drop to record low levels, stimulating other areas of spending, such as the housing market.



Long-Term Interest Rate

Sources: Ontario Ministry of Finance and Statistics Canada — data for the yield on 10-year Government of Canada bonds.

In the medium term, interest rates are expected to rise from what are currently still very low rates. However, with expectations of inflation anchored at about two per cent, it is unlikely that nominal interest rates will return to the very high levels experienced in the 1980s and early 1990s.

SECTION V: STRUCTURAL FACTORS SHAPING ONTARIO'S ECONOMIC FUTURE

The previous discussion dealt with forces affecting Ontario's macroeconomic outlook — broad, statistical indicators such as total employment and the value of GDP. This section considers the forces that are expected to shape the composition of the economy: which industries will provide jobs and what goods and services will be produced. While this report provides specific macroeconomic projections, it does not attempt to break these down into projections for specific industries.

Economy always subject to cyclical change

The economy is subject to both short-term or cyclical change as well as longer-term or structural change. Cyclical change is inherently temporary: alternating periods of growth and recession tend to affect all industries to varying degrees. Structural change, such as shifts in consumer demands, shares of global production or the relative importance of different industries in the economy, is more or less permanent.

As highlighted in Appendix 2A, Ontario's economy has undergone considerable structural change and will continue to do so in the future. For example, Ontario's economy has shifted from a domestic and manufacturing focus to one that is powered strongly by services, especially business and financial services, and that is increasingly integrated into the North American market.

This section examines three key economic drivers of structural change that, while not explicitly modelled, are expected to help shape the composition of Ontario's economy. These are technology, trade relations and globalization of financial markets.

1. Adapting to Rapid Technological Change

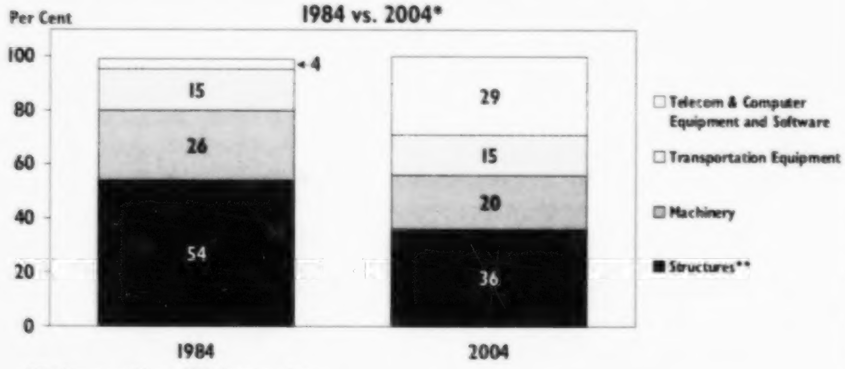
ICT investment ongoing

Ontario's economy continues to adjust to transformational change, such as the revolution in information and information technology. Businesses in developed countries are rapidly shifting their capital investment from structures to information and communications technology and software (ICT).

In Canada, ICT has risen from 4 per cent to 29 per cent of total business real investment in the past two decades. There has been less investment in additional structures such as warehouses and office towers, because business has become more efficient in its use of space. Along with these changes are many others, such as the demand for new skills in a more complex business environment.

Share of Business Real Investment in Canada

1984 vs. 2004*



* Totals may not add up to 100% due to rounding.
** Includes Furniture.
Sources: Statistics Canada (National Income and Expenditure) and Ontario Ministry of Finance.

Continuous review of processes demanded

This global investment in ICT both responds to competition and increases competition by helping firms break into new markets. It is forcing Ontario firms, along with those around the world, to transform themselves by continuously reviewing their core priorities and processes.

From Ontario's perspective, there is likely to be even stronger international competition for investment in job-producing growth due to technological change. While it is not possible to forecast whether another transformational change is around the next corner, or whether most technological change in the next 20 years will be less radical in nature, it is important to have an economy that is predisposed to making the most of the new opportunities that such changes could provide.

Encourage innovation and investment

Accordingly, the success of Ontario firms in attracting investment and creating jobs will depend on both the effectiveness of Ontario managers and their employees and on Ontario and Canadian policies to encourage innovation and investment and thereby promote productivity growth.

2. Changing Trade Patterns Within Canada and the World

Ontario's economy is outward looking, as a significant share of Ontario's income comes from trade. Changes by our trading partners are likely to pose challenges and provide new opportunities for Ontario's firms and workers.

Interprovincial trade important

Ontario's trade with the rest of Canada is important for Ontario's economy. The Canadian federation has resulted in economic specialization among provinces based on their comparative advantage; features such as a well-educated labour force and proximity to receptive markets have given Ontario's economy advantages in those industrial sectors that can most benefit from those features. Historically, industries such as manufacturing and financial and business services were relatively large in Ontario due to exports to the rest of Canada. Today, Ontario's relatively large manufacturing sector exports internationally, principally to the United States.

Ontario's relatively large business and financial services sector continues to reflect Toronto's role as a national financial capital, with a strong concentration of corporate head offices and professional support services such as legal, accounting and advertising industries.

Services trade still growing

Ontario's services trade with other provinces is growing relative to GDP, and is expected to continue to grow. However, the rate of growth of interprovincial trade will depend on both the success of Canadian governments in removing internal barriers to trade, and on the growth and competitiveness of other provinces.

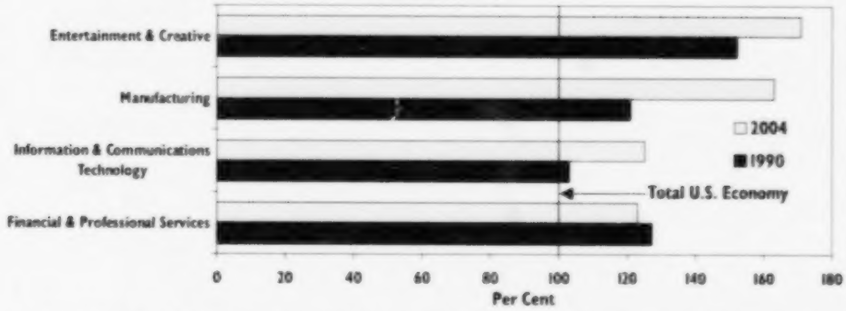
The Ontario economy integrated more firmly into the world economy during the last half century, due to lower international transportation and communications costs, several international agreements to reduce trade barriers, and dramatic improvements in international financial markets. This trend is projected to continue; however, Ontario faces increased competition for products, services and investment from the United States and other developed countries as well as from other rapidly developing economies such as India and China.

Relative to the U.S. average, Ontario has a high employment share in four industries: manufacturing, information and communications technology, financial and professional services, and the entertainment and creative cluster. In other words, Ontario has specialized in these industries, and exports these goods and services to other provinces, the United States and the rest of the world. As shown in the chart below, Ontario's specialization relative to the U.S. economy in manufacturing, information and communications technology, and the entertainment cluster has increased since 1990.

In addition, rural and northern Ontario have competitive advantages in agriculture and resources.

Ontario's Sectoral Share of Employment Relative to the U.S. Economy

1990 vs. 2004*



* Ontario 2004 data are compared to U.S. 2004 data while Ontario 1990 data are compared to U.S. 1990 data. See Chapter 2 – Appendix A for industry details on entertainment and creative as well as on information and communications technology industries. Financial and professional services include finance, insurance, real estate, professional, scientific and technical industries.
Sources: Statistics Canada (LFS), Bureau of Labor Statistics (CES) and Ontario Ministry of Finance.

Facing significant competitive challenges

Ontario, like many U.S. manufacturing states, faces significant competitive challenges in some areas where newly industrializing countries can offer companies much lower wage rates. This evolution has been underway for quite a few years, and the bulk of low-skilled, labour-intensive manufacturing has already moved offshore. Manufacturing accounts for about 18 per cent of total employment today, down from 22 per cent 20 years ago. Its share of GDP also fell to 21 per cent from 25 per cent during this period.

Competition is growing not only in goods production, but also in services. In some cases, high-technology service industries (from which Ontario is looking for its future growth) are attracted by countries such as India, which has educated workers who are willing to work for less than their Ontario counterparts.

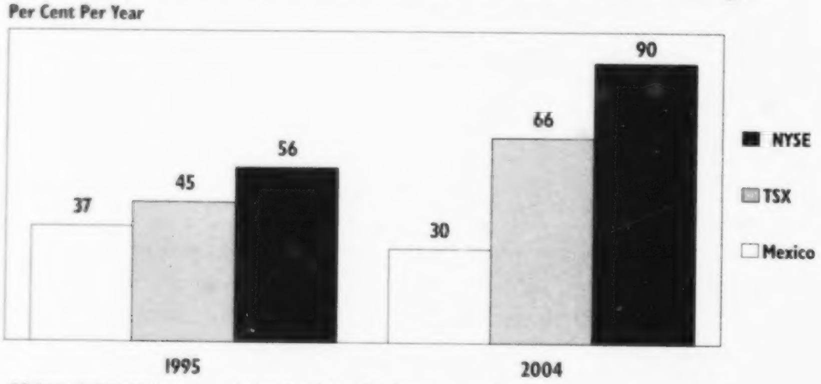
3. Globalization of Financial Markets

A third key change is the growing integration of financial markets in North America and globally. Domestic and international barriers to investment are expected to continue falling; for example, through further harmonization of national financial regulations over time.

U.S. capital markets deeper

Active trading by investors is an important indicator of stock-market liquidity and healthy capital markets. Within North America, as the chart on the next page shows, the most liquid pools of equity capital are in the United States. In addition, U.S. capital markets are much deeper and attract capital from around the world. The chart also shows that trading liquidity is increasing in both Canada and the United States. Because the United States has far more active trading than Canada, companies listed on U.S. exchanges have access to more, and increasingly specialized, investors than in Canada, with the potential for better and cheaper financing.

Trading Liquidity* on National Stock Exchanges



* Volume of annual trading as per cent of total stock issued by domestic companies.
Sources: World Federation of Exchanges and Ontario Ministry of Finance.

Canadian corporations turning to U.S.

Large, creditworthy corporations are relying less on financial institutions for capital, and are turning to global capital markets as a cheaper, more efficient source of finance. Over the past 10 years, Canadian corporations raised nearly half of their bond finance capital and 15 per cent of their equity capital in the United States., with both U.S. shares doubling compared to 1985-94. It is likely that this trend will continue for the next two decades.

Changing information and communications technology as well as falling regulatory barriers could also help high-quality small and medium-sized enterprises (SME) access capital. Stronger competition in the financial sector has led, for example, to the use by large financial institutions of better analysis of SME creditworthiness based on new financial tools.

Ontario investors, including pension funds and other corporate entities as well as individuals, are also finding attractive opportunities through markets that span outside Ontario's borders. However, this trend is also expected to improve relative returns for Ontario investors.

SECTION VI: INFRASTRUCTURE AND THE ECONOMY

Growth requires adequate infrastructure

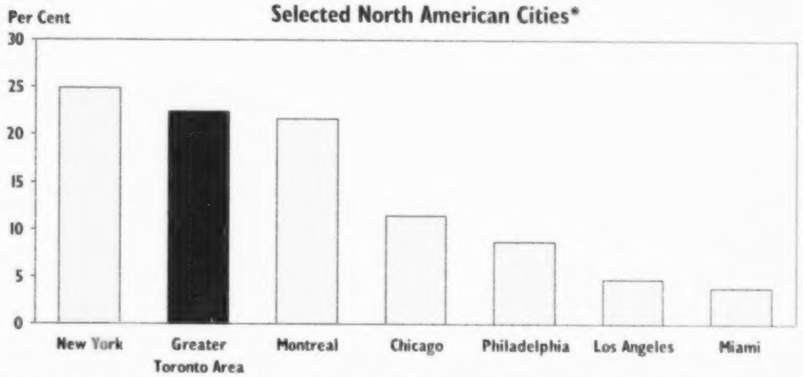
Implicit in this report are assumptions that the economy will be supported by an adequate infrastructure, reliable supplies of energy and a healthy environment that sustains a healthy workforce. The role of infrastructure in raising productivity is discussed in Chapter 3. The remainder of this section considers three infrastructure challenges that need to be met to achieve sustainable economic growth: responding to increased urbanization; ensuring an adequate supply of clean water; and meeting the demand for electricity.

Infrastructure Needs Resulting from Urbanization

Rapid urbanization can cause environmental, social and traffic congestion challenges, which impose costs on residents and businesses alike. About half the world's population is now urbanized, and many cities around the world anticipate doubling in population in the next 20 years. As cities expand, there will be greater need for measures to minimize these costs. The solutions may include channelling growth into more sustainable and compact patterns: coupling new infrastructure with more efficient approaches to cost recovery, increasing environmental and energy-efficiency regulation; and encouraging the use of public transit.

Similar trends are observed in an urbanizing Ontario. As the Greater Golden Horseshoe[6] continues to grow, urban development is projected to become more sustainable through more compact development, for example, through stronger planning mechanisms, by redeveloping brownfields, intensifying development, and maintaining and enhancing the viability of infrastructure such as public transit. The Greater Toronto Area already has the second-highest rate of public transit usage in North America behind the New York area.

Per Cent of Workforce Taking Public Transit to Work



* Canadian data are for 2001 for Census Metropolitan Areas (CMAs). U.S. data are for 2000 for Census Metropolitan Statistical Areas (CMSAs).
Sources: Statistics Canada Census and U.S. Census.

Electricity in Ontario

Reliable electricity essential

Access to a competitively priced — and reliable — electricity supply is an essential prerequisite for growth in any modern economy. Businesses will be reluctant to make the investments in machinery and equipment that underpin productivity growth if they cannot be reasonably certain of such a supply.

In this context, in 2005, the publication of the Independent Electricity System Operator's (IESO) "10-Year Outlook" identified the supply adequacy challenges facing Ontario's electricity sector, highlighting the importance of the Province taking steps to ensure long-term supply adequacy.

In addition to the retirement of all of Ontario's remaining coal-fired power stations, the Outlook projects the retirement of a number of nuclear generating units before the end of 2015. Overall, in the absence of further supply initiatives and conservation efforts, some deficiency of available resources over at least part of the coming decade is identified.

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[6] The Greater Golden Horseshoe includes Brant; Dufferin; Durham; Haldimand; Halton; City of Hamilton; Kawartha Lakes; Niagara; Northumberland; Peel; Peterborough; Simcoe; City of Toronto; Waterloo; Wellington; and York.

The 2004 Electricity Conservation and Supply Task Force (ECSTF) provides a longer-term view on Ontario's electricity sector.

The Task Force's report noted that by about 2020 virtually all of the Province's existing nuclear plants will reach the end of their planned operating lives and will need to be refurbished, replaced or retired.

The ECSTF estimated that potential renewable and clean generational capacity exists in Ontario, including 1,200 megawatts (MW) to 4,000 MW of additional waterpower; windpower capacity of 2,100 MW to 6,200 MW; and new biomass energy could provide an additional 1,700 MW.

ECSTF concluded that, going forward:

Balanced approach recommended

> "A balanced approach with new gas-fired peaking and intermediate capacity, expansion of renewable power where economic, and new base-load nuclear and hydro additions, combined with aggressive measures to conserve energy, are all likely to be part of a competitive energy supply for Ontario."

Over the next 20 years, the construction of new supply, along with considerable focus on conservation efforts, will remain essential in preserving Ontario's reliable and competitively priced electricity system.

Ontario Municipal Water and Wastewater Infrastructure Investment Needs

In "Watertight: The Case for Change in Ontario's Water and Wastewater Sector," the report of the Water Strategy Expert Panel, investment needs for Ontario's municipal water and wastewater systems are expected to range from $30 billion to $40 billion over the next 15 years, with the best forecast of the need at $34 billion.

The $34 billion investment need consists of $25 billion for capital renewal, including $11 billion in deferred maintenance and a further $9 billion for growth.

After taking into account annual investment at current levels, the investment gap is $1.2 billion per year.

Given the large investment needs, the Panel recommended changes in a number of areas including the governance, organization and financing of Ontario's water and wastewater systems to ensure that the investment needed in municipal water and wastewater infrastructure takes place, that systems are financially sustainable, and that water rates are affordable.

Source: Water Strategy Expert Panel, "Watertight: The Case for Change in Ontario's Water and Wastewater Sector," July 22, 2005.

CONCLUSION

The Ontario economy is likely to grow at a slowing rate over the course of the next two decades. This is a consequence of slower labour-force growth. With rising productivity, the level of average real incomes is expected to continue growing at a healthy rate.

Productivity growth is the key factor that will determine the degree of improvement in Ontario living standards. Productivity and its drivers: technological change, investment, and skills and knowledge, are the focus of Chapter 3. Very small differences in annual productivity growth add up to large differences in the size of the economy.

Continued strong economic growth requires remaining competitive in a changing world economy. Three key trends that are expected to continue shaping the Ontario economy are rapid technological change, evolving trade patterns and globalization of financial markets.

APPENDIX 2A: THE CHANGING COMPOSITION OF ONTARIO'S ECONOMY

Introduction

Chapter 2 presented 20-year projections for Ontario's economy at a broad, macroeconomic level; for example, the total value of production, total number of jobs and amount of consumer spending. Within that context, this appendix highlights some of the additional and ongoing microeconomic factors that affect Ontario's economy, and in particular its sectoral or industrial composition.

This appendix will discuss two key trends: the shift from goods to services, and the increasingly rapid pace of change within sectors of the economy.

It then turns to three sectors that are projected to have faster-than-average employment growth over the next two decades. All are service sectors: information and communications technology; financial and business services; and the entertainment and creative cluster.

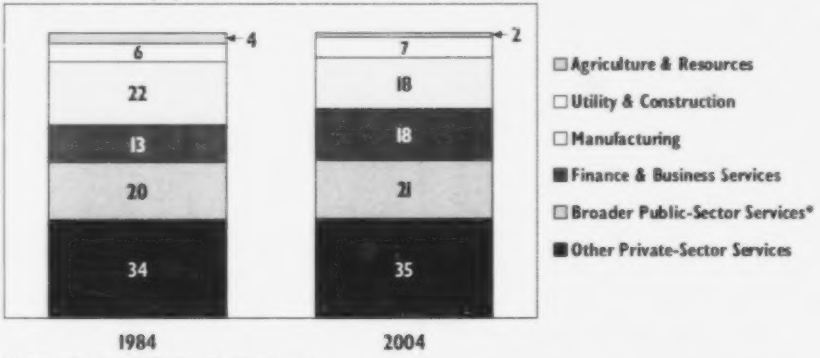
The Shift from Goods to Services Employment

Ontario's economy continues to shift from employment in goods production (resources and manufacturing) to employment in the service sector, a trend similar to that for major countries across the Organization for Economic Co-operation and Development (OECD). In 2004, the service sector employed 74 per cent of Ontario's workforce, up from 68 per cent in 1984. Over the next two decades, the sector's share of employment is expected to continue to increase.

The agriculture and resources sectors now employ two per cent of the workforce, a significant decline from four per cent two decades ago. In contrast, output in agriculture and resources rose during this time. Productivity rose even faster than production, with employment falling from 171,000 in 1984 to 113,000 in 2004. This is a trend similar to that experienced in many countries in the OECD.

Share of Employment by Industry, Ontario

Per Cent of Total Employment



* Includes education, health and public administration.
Totals may not add to 100 per cent due to rounding.
Sources: Statistics Canada (LFS) and Ontario Ministry of Finance.

Manufacturing's share of total Ontario employment also fell in the past two decades, from 22 per cent in 1984 to 18 per cent in 2004. Although manufacturing employment actually rose by 14 per cent in this period, total Ontario employment rose faster. In contrast, in most of the major countries in the OECD, manufacturing employment was falling. Ontario now has a higher share of its employment in manufacturing than any other jurisdiction in North America except Indiana and Wisconsin.

Over the next 20 years, Ontario's private-sector services industries are expected to continue to integrate with the U.S. service sector and into the world economy. Ontario's international service exports are projected to increase gradually. Service exports have a disproportionate impact on domestic value-added and economic growth because they typically embody very few imported inputs, unlike goods exports.

Businesses are also likely to offer ever-more sophisticated, higher value-added choices for Ontario consumers due to rising GDP per capita, an aging population, and tougher domestic and international competition. These pressures may also drive private-sector service productivity growth.

Services are the fastest-growing component of the global economy. Even in developing countries, service exports grew more rapidly than manufacturers in the 1990s. More efficient backbone services — in finance, telecommunications, domestic transportation, retail and wholesale distribution, and professional business services — improve the performance of the whole economy because they have broad linkage effects.

Source: World Bank (Global Economic Prospects: Realizing the Development Promise of the Doha Agenda, 2004), p. xxi.

Rapid Change Within Sectors as Firms and Individuals Adapt

Within sectors, it is anticipated that there will continue to be rapid change as firms compete with one another to adapt best to cyclical and structural change. The scale of change is shown by a Statistics Canada finding that, since 1961, job turnover in Canadian manufacturing was close to 40 per cent on average in any given decade and 65 per cent over 20 years.[7] This is a critical element of productivity growth that underpins overall economic growth.

It is difficult to project the long-term growth of industries at a detailed level with any reliability. Between 1987 and 2004, for example, software publishers employment grew by 6,727 per cent; education support services by 1,544 per cent; and office administrative services by 491 per cent, each from small initial levels. On the other hand, many industries experienced sharp declines.

The small business sector, in particular, is in constant flux, even though the employment shares of small, medium and large firms are roughly the same as they were two decades ago.

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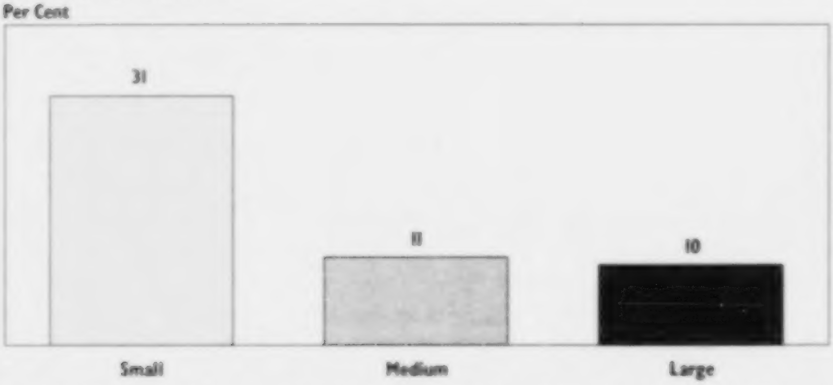
[7] Statistics Canada Daily, *Renewing Canada's Manufacturing Economy*, October 21, 2004.

Small firms are constantly entering and leaving the market as well as increasing and decreasing their workforces. As large businesses encroach into small business activities, small businesses find niches in new personal and business services. Large corporations outsource more goods and services inputs for greater specialization and efficiency, and more self-employed individuals and small businesses are serving large business customers.

Average Annual Business Turnover by Business Size



Note: Small business, 0-49 employees, plus self-employed individuals; Medium business, 50-499 employees; Large business, 500+ employees.
Sources: Statistics Canada (Employment Dynamics) and Ontario Ministry of Finance.

Within the small business sector, the number of private-sector self-employed individuals without employees has grown by 123 per cent, while employment at small businesses with employees grew by 49 per cent (1984-2004).

In addition, the workforce can expect to face continuing changes. While employment data typically show net changes in the workforce, there are many more job entries and exits from individual firms. This ongoing turnover plays a significant role as firms adapt to changing economic circumstances. As the workforce ages, it remains to be seen whether fewer employees will change jobs, or whether the pace of change will accelerate reflecting differing attitudes towards workplace attachment.

As part of this change, some occupations grow much more quickly than others, and in many cases, occupational skill sets change to meet new demands of technology and the workplace. For example, annual average employment growth in financial, secretarial and administrative occupations over the 1987-2004 period has been well below that for all occupations. This can be explained in part by the adoption of office automation (e.g., computers, electronic mail, voice messaging systems, etc.).

In the skilled trades, not only are skill needs changing as technologies are introduced, but these occupations also face very high rates of retirement in the foreseeable future. According to the Ontario Chamber of Commerce's (OCC) 2005 report entitled *Taking Action on Skilled Trades — Establishing the Business Case for Investing in Apprenticeship*, Ontario will face a shortage of about 100,000 skilled trades workers in the manufacturing sector over the next 15 years due to retirement. The OCC's 2003 survey of its members also revealed that within the next 15 years, 52 per cent of skilled tradespeople are expected to retire. As well, 41 per cent of Ontario's skilled trades anticipated that they will face skills shortages in their industry within five years.

As Ontario moves towards an increasingly knowledge-based economy, high-skilled occupations (requiring a postsecondary education) have shown above-average annual employment growth over the past two decades. Major contributors to growth in high-skilled jobs have been professional occupations in business and finance and natural and applied sciences and related occupations. Employment growth within these and many other occupations demonstrates the increasing role that information and communication technologies (such as computers) are playing within the economy. Ontario is well placed for such trends as it has a very high rate of participation in postsecondary education. It is projected that more of the economy's workforce will be located in service sectors and the average output per worker (and thus average productivity in the economy) will rise.

Sectoral Implications

The two broad trends discussed above are expected to continue and to influence the composition of the Ontario economy over the next two decades. The following sections examine three sectors that are expected to be of growing importance: information and communications technology; financial and business services; and the entertainment and creative cluster.

Information and Communication Technology (ICT) Sector[8]

The ICT sector is composed of manufacturing and services industries that electronically capture, transmit and display data and information. Its share of total employment increased from 4.5 per cent in 1987 to 4.9 per cent in 2004, and is expected to increase through the projection period.

Information and communication technologies are "enabling technologies," which underpin the competitiveness and efficient operation of all sectors of the economy. Increasing reliance on, and use of, ICT in business, medicine, industry and leisure is likely to continue to drive the growth of the ICT sector as technological innovation would lead to a significant decline in costs of business operations.

Ontario has an exceptional skill base as 75 per cent of the sector's workforce has completed a postsecondary education compared to 59 per cent in the United States. Ontario's R&D focus is in computer and electronic manufacturing. With over 300,000 jobs, Ontario is North America's second-largest employer in the ICT sector, behind only California. It has three main centres — Toronto, Ottawa and Waterloo — each with its own range of specializations.

With these strengths, Ontario has the capacity to attract and absorb new advances in ICT, enabling the sector to continue increasing its share of total employment in the next two decades.

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[8] Information and communication technology includes commercial and service industry machinery; computer and electronics product manufacturing; other electrical equipment and component manufacturing; software publishers; telecommunications; ISP, portal and data processing services; commercial and industrial machinery rental and leasing; computer systems design and rental services; computer and communications equipment wholesale; and electronic and precision equipment repair and maintenance.

Business and Financial Services Sector[9]

According to the Institute for Competitiveness and Prosperity, business and financial services are currently Ontario's first and second largest traded clusters, respectively, followed by autos. It is projected that these sectors, especially business services, will continue to increase their share of Ontario's employment.

In the past two decades, business and financial services' share of jobs rose from 13 per cent to 18 per cent of total employment, and now equals manufacturing employment.

Ontario's leading position as the business and financial head-office capital of Canada is expected to continue, although there are competitive and regulatory risks for each subsector. This would reflect growing integration and specialization within the North American economy. It also reflects the continued success of major Ontario-based financial companies as they expand and compete globally beyond Canada from an Ontario base, including new markets such as China.

Financial services growth will be supported by the growing, more sophisticated investment and savings needs of an aging population, and the specialized capital needs of businesses from across Canada. Business services are based largely on an educated, innovative workforce. They include professional services such as legal, accounting and management consulting. They also include services outsourced from corporations due to growing specialization for greater efficiency.

Canada's Near-Shore Outsourcing Advantage

According to a United Nations study,* Canada is currently one of the top four beneficiary countries from U.S. business outsourcing, aided by near-shore outsourcing location, behind India, Ireland and Israel.

A.T. Kearney** consultancy has compiled "offshore location attractiveness indexes" for industrial and developing countries, and, in 2004, Canada was ranked near the top in the world. Canada ranked number two, behind India, for labour skills and availability, and ranked number two, behind Singapore, for supportive business environment, including locational factors such as cultural adaptability, infrastructure, country risk and intellectual property security.

* United Nations Conference on Trade and Development, "The Offshoring of Corporate Service Functions: The Next Global Shift?" *World Investment Report 2004: The Shift Towards Services*, United Nations, 2004.

** A.T. Kearney, "Making Offshore Decisions: Offshore Location Attractiveness Index," 2004.

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[9] Business and financial services include finance; insurance and real estate and leasing; professional scientific and technical services; management of companies and enterprises; administrative and support; and waste management and remediation services.

Entertainment and Creative Sector[10]

As a share of provincial employment, the arts and entertainment industries are expected to continue to rise steadily over the next 20 years from three per cent in 2004. In addition to employment and consumption trends within the current structure of the sector, the increasing convergence of culture and technology is expected to generate growth.

A national hub for media and the arts, Ontario is a leading choice for headquarters of prominent broadcasting, publishing and performing arts institutions operating from their national bases in the Greater Toronto Area or Ottawa.

Compared to the rest of Canada and the United States, Ontario has a higher proportion of educated, creative workers, typically self-employed or in a micro-enterprise, in these industries. This allows reliable and cost-effective provision of specialized services.

Ontario is already host to one of the most vibrant and active English-language theatre scenes in the world. By 2025, Ontario's traditional destinations and attractions are expected to have diversified to include niche cultural activities and personalized packages. As its reputation as a cultural destination is consolidated, even more "cultural tourists" are expected to attend Ontario's theatres, museums, galleries and festivals in the future.

Ontario's multicultural makeup means that there is strong capacity to forge international networks for trade. Advances in communications and technology would also allow higher-quality dissemination of cultural products at lower cost.

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[10] Entertainment and creative industries includes newspaper, periodical, book and database publishers; motion picture and sound recording; specialized design services; advertising-related services; radio and television broadcasting; pay TV and specialty TV and program distribution; performing arts; spectator sports and related industries; and heritage institutions.

APPENDIX 2B: DETAILED ECONOMIC PROJECTION TABLES

Details of the Ontario Economic Base-Case Scenario

	Actual (Average)				Projection (Average)			
Per Cent Change	**1982-89**	**1990-94**	**1995-99**	**2000-04**	**2005-09**	**2010-14**	**2015-19**	**2020-25**
Real Gross Domestic Product	**3.9**	**0.4**	**4.3**	**3.0**	**2.9**	**3.0**	**2.6**	**2.3**
Personal consumption	3.9	0.8	3.4	3.5	3.0	2.7	2.5	2.3
Goods	3.5	-0.2	3.9	3.4	2.8	2.5	2.3	2.0
Services	4.3	1.8	3.0	3.6	3.2	2.9	2.6	2.6
Residential construction	7.3	-8.2	3.4	6.8	1.8	1.6	1.9	1.6
Non-residential construction	6.3	-11.6	7.9	-2.9	5.2	3.9	1.8	2.6
Machinery and equipment	7.9	-0.2	11.1	2.2	7.7	4.3	2.5	2.8
Exports	4.9	3.8	7.9	2.2	3.4	3.8	3.4	2.8
Imports	6.1	3.1	7.4	3.0	4.0	3.7	3.2	3.0
Nominal Gross Domestic Product	**9.9**	**2.2**	**5.6**	**4.8**	**4.9**	**4.8**	**4.8**	**4.7**
Other Economic Indicators								
Retail sales*	NA	4.8	5.5	4.3	4.3	4.7	4.6	4.6
Housing starts (000s)	73.3	52.6	50.8	79.7	75.0	78.3	77.7	76.1
Personal income	9.7	2.6	4.3	4.2	4.7	4.4	4.4	4.5
Labour Market								
Participation rate** (per cent)	68.6	67.6	65.8	67.8	68.3	68.0	67.5	67.0
Labour force	2.2	0.3	1.6	2.4	1.5	1.2	1.0	0.9
Employment	2.4	-0.7	2.4	2.3	1.7	1.4	1.3	0.9
Unemployment rate** (per cent)	7.5	9.5	8.0	6.6	6.4	5.6	4.8	4.1
Prices								
Consumer price index	5.7	2.4	1.7	2.5	1.9	1.8	2.0	2.1
Productivity								
Real GDP per capita	2.2	-1.0	3.0	1.6	1.6	1.8	1.5	1.3
Real GDP per employee	1.5	1.1	1.9	0.7	1.2	1.5	1.3	1.4

* Retail sales data available from 1991 onward.

** The 2020-25 column shows only end-of-period for the participation and unemployment rate.

Sources: Statistics Canada, Canada Mortgage and Housing Corporation and Ontario Ministry of Finance.

Details of the Ontario Economic Low Growth Scenario

	Actual (Average)				Projection (Average)			
Per Cent Change	**1982-89**	**1990-94**	**1995-99**	**2000-04**	**2005-09**	**2010-14**	**2015-19**	**2020-25**
Real Gross Domestic Product	**3.9**	**0.4**	**4.3**	**3.0**	**2.9**	**2.4**	**1.9**	**1.6**
Personal consumption	3.9	0.8	3.4	3.5	3.0	2.3	2.0	1.9
Goods	3.5	-0.2	3.9	3.4	2.8	2.0	1.7	1.4
Services	4.3	1.8	3.0	3.6	3.2	2.6	2.2	2.2
Residential construction	7.3	-8.2	3.4	6.8	1.8	0.6	1.7	1.2
Non-residential construction	6.3	-11.6	7.9	-2.9	5.2	0.7	0.8	1.5
Machinery and equipment	7.9	-0.2	11.1	2.2	7.7	1.8	1.4	1.6
Exports	4.9	3.8	7.9	2.2	3.4	3.3	2.7	2.0
Imports	6.1	3.1	7.4	3.0	4.0	3.1	2.8	2.6
Nominal Gross Domestic Product	**9.9**	**2.2**	**5.6**	**4.8**	**4.9**	**4.2**	**4.5**	**4.3**
Other Economic Indicators								
Retail sales*	NA	4.8	5.5	4.3	4.3	4.1	4.3	4.3
Housing starts (000s)	73.3	52.6	50.8	79.7	75.0	71.1	63.5	59.9
Personal income	9.7	2.6	4.3	4.2	4.7	3.8	4.1	4.3
Labour Market								
Participation rate** (per cent)	68.6	67.6	65.8	67.8	68.3	67.9	67.2	66.3
Labour force	2.2	0.3	1.6	2.4	1.5	1.0	0.7	0.6
Employment	2.4	-0.7	2.4	2.3	1.7	1.1	1.0	0.6
Unemployment rate** (per cent)	7.5	9.5	8.0	6.6	6.4	5.7	4.7	4.1
Prices								
Consumer price index	5.7	2.4	1.7	2.5	1.9	1.8	2.2	2.4
Productivity								
Real GDP per capita	2.2	-1.0	3.0	1.6	1.6	1.4	1.1	0.9
Real GDP per employee	1.5	1.1	1.9	0.7	1.2	1.3	0.9	1.0

* Retail sales data available from 1991 onward.
** The 2020-25 column shows only end-of-period for the participation and unemployment rate.

Sources: Statistics Canada, Canada Mortgage and Housing Corporation and Ontario Ministry of Finance.

Details of the Ontario Economic High Growth Scenario

	Actual (Average)				Projection (Average)			
Per Cent Change	**1982-89**	**1990-94**	**1995-99**	**2000-04**	**2005-09**	**2010-14**	**2015-19**	**2020-25**
Real Gross Domestic Product	**3.9**	**0.4**	**4.3**	**3.0**	**2.9**	**3.5**	**3.2**	**3.0**
Personal consumption	3.9	0.8	3.4	3.5	3.0	3.1	2.9	2.8
Goods	3.5	-0.2	3.9	3.4	2.8	3.1	2.8	2.5
Services	4.3	1.8	3.0	3.6	3.2	3.2	3.0	2.9
Residential construction	7.3	-8.2	3.4	6.8	1.8	2.6	2.2	1.9
Non-residential construction	6.3	-11.6	7.9	-2.9	5.2	6.8	2.8	3.7
Machinery and equipment	7.9	-0.2	11.1	2.2	7.7	6.6	3.6	3.9
Exports	4.9	3.8	7.9	2.2	3.4	4.2	4.1	3.5
Imports	6.1	3.1	7.4	3.0	4.0	4.3	3.6	3.4
Nominal Gross Domestic Product	**9.9**	**2.2**	**5.6**	**4.8**	**4.9**	**5.5**	**5.2**	**5.0**
Other Economic Indicators								
Retail sales*	NA	4.8	5.5	4.3	4.3	5.3	4.9	4.9
Housing starts (000s)	73.3	52.6	50.8	79.7	75.0	85.2	89.7	89.9
Personal income	9.7	2.6	4.3	4.2	4.7	5.0	4.7	4.9
Labour Market								
Participation rate**(per cent)	68.6	67.6	65.8	67.8	68.3	68.2	68.0	67.8
Labour force	2.2	0.3	1.6	2.4	1.5	1.5	1.3	1.1
Employment	2.4	-0.7	2.4	2.3	1.7	1.7	1.5	1.2
Unemployment rate** (per cent)	7.5	9.5	8.0	6.6	6.4	5.4	4.8	4.0
Prices								
Consumer price index	5.7	2.4	1.7	2.5	1.9	1.9	1.9	1.9
Productivity								
Real GDP per capita	2.2	-1.0	3.0	1.6	1.6	2.1	1.9	1.8
Real GDP per employee	1.5	1.1	1.9	0.7	1.2	1.8	1.7	1.8

* Retail sales data available from 1991 onward.
** The 2020-25 column shows only end-of-period for the participation and unemployment rate.

Sources: Statistics Canada, Canada Mortgage and Housing Corporation and Ontario Ministry of Finance.

APPENDIX 2C: COMPARISON OF MINISTRY OF FINANCE PROJECTION TO OTHER FORECASTS

Comparison of Ministry of Finance Projection to Other Forecasts (2009 to 2025 averages)

	Ontario Real GDP % Growth	Ontario Productivity % Growth	Ontario CPI Inflation Rate %	Bond Yield %	Exchange Rate in Cents US[1]
Conference Board	2.7	1.4	2.2	6.3	89.7
University of Toronto Institute for Policy Analysis	2.6	1.8	2.0	6.0	96.8
Informetrica Ltd.	2.5	1.7	1.7	6.9	83.2
Centre for Spatial Economics	2.4	1.1	1.5	5.9	81.1
Average	**2.6**	**1.5**	**1.9**	**6.3**	**87.7**
Ministry of Finance	2.6	1.4	2.0	6.1	87.6

[1] 2025 average except for Conference Board which is 2024.

EXPERT OPINION

THE GLOBAL SETTING TO 2025: IMPLICATIONS FOR ONTARIO

Contribution by
Glen Hodgson,
Vice-President and
Chief Economist,
Conference Board
of Canada

Through its ongoing research, and in particular work undertaken for the edition of its publication *Performance & Potential 2005-06*, the Conference Board of Canada has identified five key drivers for the global economy over the next two decades.

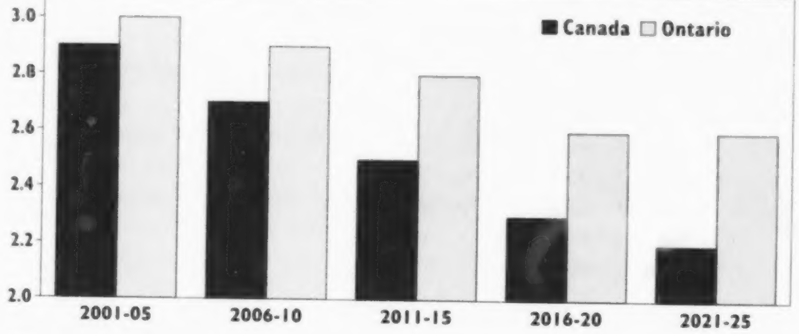
Global Drivers

What are the major factors that will shape the world economy to 2025?

- The first driver is **global demographic transformation**. Rapidly aging populations in Western Europe and Japan will mean slower labour-force growth, or even contraction, and will reduce economic growth potential at a time when cost pressures are already building on pension and health care systems. In contrast, most developing countries have younger, more rapidly growing populations, which can translate into higher rates of economic growth under the right economic policy conditions. The population of the United States will age very little over the coming two decades, thanks to higher birth and immigration growth rates. Canada and Ontario's populations will age faster than that of the United States but not as quickly as those of Japan or Western Europe, and Ontario will continue to attract a larger share of immigrants to its labour force than other Canadian provinces. Over the 2000-04 period, 57 per cent of new arrivals to Canada settled in Ontario.

Potential Output Growth*

Per Cent



*Average annual compound growth.
Source: Conference Board of Canada.

- A second, related driver is **national economic policy**. The macro- and microeconomic policy framework in much of continental Western Europe and Japan is not flexible, with large fiscal deficits, rigid labour markets, and heavy current and future social spending for health care and pensions. In contrast, many emerging markets have taken positive action in recent years to improve their macro- and microeconomic policy frameworks. North America generally offers a more flexible policy environment than other industrial economies.

When the forces of demographics and economic policies are combined, the result is a major shift in the global economy. Much of Western Europe and Japan will experience a significant drag on economic growth potential over the coming decades and sustainable annual growth should fall

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The views expressed in this section are those of the author and do not necessarily reflect those of the Government of Ontario.

below two per cent. North America will perform better. U.S. growth potential will slow gradually to just below three per cent in 2025; Canada's growth potential will see a more significant decline over the next two decades, to 2.2 per cent in 2025; and Ontario's growth potential will fare better, with 2.6 per cent potential annual growth in 2025.

In emerging markets, underlying growth performance and potential have been boosted by improved economic policies and growing populations. The rise of the BRIC nations specifically — Brazil, Russia, India and China (BRIC) — is a strong and perhaps irresistible force in reshaping the global economy. While each BRIC country is at a very different stage of economic and political development, together they have a solid economic growth outlook that could last for decades. Depending on the quality of economic policies, BRIC growth in 2025 could range from 3 per cent for Russia, to 4.5 per cent for China, to 6 per cent or even higher for India. The BRIC nations will have a much larger share of global gross domestic product (GDP) and more political and economic influence.

■ A third driver is the **pace and nature of globalization**. Past decades have brought expanded multilateral and regional trade liberalization along with advances in transportation and communications technology. These changes, and the growing integration of the major emerging markets into the world economy, have transformed global patterns of production, investment and trade. Today, products and even services are increasingly broken down into components, each of which can be produced or generated in the most advantageous location. Foreign investment and offshore outsourcing and insourcing are being used to position these elements of production. The result has been the development of global products and services, distributed through global supply chains across many countries.

Globalization also means a growing separation between standardized production and services (where labour costs, especially in emerging markets, are a major success factor) and specialized production and services that are driven by innovation and flexibility. Finally, there continues to be a gradual shift in the composition of global GDP, with services growing faster than manufacturing or resource sectors.

As described in the Conference Board of Canada's *Performance & Potential 2005-06*, international trade and investment has thus evolved into a new phase called "integrative trade." This is a comprehensive process that captures all elements and realities of international business today — exports; imports used to create exports; foreign direct investment or FDI (both inward and outward); offshore outsourcing and insourcing; trade-in services; and sales from foreign affiliates created through FDI.

Canada and Ontario are well down the evolutionary path towards integrative trade, although traditional forms of trade remain important. Since 1990, Canada has experienced rising levels of integration between imports, exports and general production, particularly in manufacturing; rising levels of intra-firm trade; a sharp acceleration of inward and outward FDI; and high and rising business revenues from foreign affiliates — revenues that are now comparable to total Canadian exports of goods.

Original research by the Conference Board of Canada concludes that trade, investment and economic integration are occurring at a faster pace between Canada (and Ontario) and major emerging markets. Nevertheless, research also indicates that Canada's and Ontario's most important future trade and investment relationship will continue to be with the United States. Even if two-way trade and investment with China and other emerging markets grow at an exceptional pace over the next two decades, the share of trade

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with the United States will remain dominant.

- A fourth driver will be the **challenge of achieving resource and environmental sustainability**. A structural shift is occurring in global hydrocarbon energy prices due to booming Asian demand, questions about the adequacy of certain parts of the global energy supply chain, and heightened political risks for some key oil and gas reserves. In addition, there is now general scientific consensus on global climate change. Even if questions remain about the causal link to human behaviour, much of the global community has committed itself to reducing human sources of greenhouse gas emissions. The Kyoto Protocol has entered into force, but even though Canada is a signatory, it will be unable to meet its 2012 Kyoto targets. Moreover, Kyoto is only a first step towards stabilization of global greenhouse gas production, with challenging international negotiations ahead.

- The fifth and final global driver will be **multi-faceted threats to security**. Security concerns and risks will arise in many forms over the coming two decades. Security will encompass issues as diverse as security at the U.S. border, which will determine Ontario's ability to integrate efficiently into the North American economy; ongoing risks of international terrorism; global pandemics and public health; organized crime; and even nuclear proliferation.

Implications for Ontario

- Ontario's annual potential growth will slow mildly over the next two decades to 2.6 per cent, but will remain higher than the Canadian average due largely to stronger immigration than other provinces. Nevertheless, an aging population should translate into a realignment of priorities in terms of public policy and services.

- Health care spending will be the dominant fiscal pressure by far over the coming two decades. Based on separate Conference Board work for the Province, health spending is projected to reach nearly 55 per cent of all public spending. The share of spending on education will decline and shift more towards postsecondary education in order to enhance labour-force skills.

- Ontario will need to cope with an aging labour force, with integrating immigrants into the labour force effectively, and with financial pressures on private- and public-sector pension systems. Policy changes and financial incentives will be needed to encourage older workers to stay in the labour force longer, beginning with the elimination of barriers such as mandatory retirement.

- Ontario's ability to adapt quickly and harness the benefits of globalization and more integrated international business will be an important determinant of its future economic success. Although the BRIC countries offer exciting potential, the United States will continue to be Ontario's most important future trade and investment partner.

- Ontario must therefore preserve and strengthen its business success factors within North America as a top priority. These factors include innovation and specialization in manufacturing and services; efficient and affordable public health care; a skilled and adaptable labour force; the quality of its transportation infrastructure; and minimizing friction at the U.S. border.

- Energy and environmental sustainability will take on increasing importance. The Kyoto Protocol is only a start in the stabilization of global greenhouse gas production. Strong global demand will also encourage additional resource developments and operations in Ontario, with local environmental impacts that must be managed.

The views expressed in this section are those of the author and do not necessarily reflect those of the Government of Ontario.

- In that context, recent legislation in support of a sustainable, long-term growth strategy for the Greater Golden Horseshoe, with targeted higher-density urban development and greater reliance on public transit, is an important step in the right policy direction — but many more such steps towards sustainable growth will be needed.

- The main security policy challenge for the Province will be to have in place sufficient capacity to anticipate, react to and mitigate the human and economic costs of events that threaten the security of its population.

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EXPERT OPINION

KEY FORCES SHAPING THE ECONOMIC GEOGRAPHY OF ONTARIO TO 2025

Contribution from
Tom McCormack,
Director, Centre for
Spatial Economics

Over the last 50 years, Ontario's economy changed significantly, evolving from agricultural production and raw material extraction into value-added activities such as processing, distribution and design. The economic landscape changed in tandem as job and community growth shifted from northern and rural areas of the province to southern and urban areas. These trends can be expected to continue at an accelerated pace in the next quarter century.

Over the past 25 years, Ontario accounted for a disproportionately large share of Canada's economic and demographic growth. A strong focus by investors on Ontario over this period left the province with the most diversified economic base in the country. Ontario leads within Canada in the production of transportation equipment; computers and electronics; other electrical equipment; plastics and rubber; fabricated metal products; machinery; primary metals; medical equipment and supplies; furniture; pharmaceuticals; chemicals; non-metallic minerals; and printing. It also leads in the provision of exportable services, including computer-system design; specialized design; management, scientific and technical consulting; publishing; advertising; gaming; Internet service providers, web search portals and data services; performing arts and spectator sports; finance and insurance; management of companies and administrative support; and motion pictures and videos. Ontario's strengthened position in these areas has meant a diminished share for agricultural, forestry and mining products, even though all of these industries produce more today in Ontario than 25 years ago.

The geographic concentration of growth in southern urban areas has been dramatic, especially in the Golden Horseshoe. Over time, the suburban municipalities of the metropolitan areas of Toronto, Oshawa, Hamilton and St. Catharines-Niagara — the original members of the Golden Horseshoe — continued to grow. But so too did the suburbs of the nearby metropolitan areas of Guelph, Kitchener, Brantford and Barrie. This suburban-oriented growth throughout the Golden Horseshoe has resulted in the knitting together of its municipalities into one large agglomeration of people and economic activity. The eight metropolitan areas that now define the Golden Horseshoe account for less than three per cent of Ontario's land mass and for only half the metropolitan areas in Ontario with populations exceeding 100,000. Yet, they accounted for more than 80 per cent of the province's employment and population growth since 1981.

Other pockets of growth within the province occurred during this period, most notably in Ottawa (accounting for almost 10 per cent of Ontario's population growth between 1981 and 2005) and in southwestern Ontario (accounting for another seven per cent). But outside the areas of the Golden Horseshoe, Ottawa and southwestern Ontario, growth in Ontario has been minimal.

The evolving industrial structure dictated a shift to growth in metropolitan areas; adding value requires more and better-educated people, the clustering of suppliers, and efficient transportation and communication networks. The concentration of this metropolitan growth in the Golden Horseshoe was the result of two key factors:

- the impacts of Canada's free trade agreements with the United States and Mexico in the early 1990s helped entrench an already well-established flow of goods and services between Ontario and the United States; and

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- the concentration of the bulk of the province's air, rail, road and marine transportation infrastructure in the Golden Horseshoe area positioned it strategically to feed the huge metropolitan markets of the United States.

These same factors will shape the economic geography of the province over the next 25 years. The United States is expected to flourish in coming years; Ontario can be expected to grow in tandem. Though half of Ontario's exports are currently tied to prosperity in the slower-growing nearby Great Lakes States (Michigan, New York, Ohio, Illinois, Pennsylvania, Indiana and Wisconsin), a quarter of its exports currently reach some of the fastest-growing, farther-flung markets of the United States, most notably California (the second-largest market for Ontario's exports, following Michigan) and Texas (seventh after Pennsylvania), but also including New Jersey, Georgia, Kentucky, Missouri, Tennessee, North Carolina, Massachusetts, Washington, Florida, Virginia, Alabama and Maryland.

The United States is Ontario's biggest export destination, but the province also exports to most of the world. In recent years, Ontario's markets in the European Union, United Kingdom, China, Mexico, Japan, Australia, Africa and Middle East all grew faster than its market in the United States.

Trade flows will drive Ontario's prosperity over the next 25 years. As a result, further concentration of investment, jobs and people in southern Ontario, especially in the Golden Horseshoe, can be expected.

There is lots of room left to grow in the Golden Horseshoe. But traffic congestion, air pollution and other undesirable byproducts of urbanization have created a backlash to growth among many stakeholders. Where the growth in Central Ontario takes place can be affected by the manner in which infrastructure is built and by policies to preserve areas of environmental sensitivity and natural heritage.

One approach to growth management — the achievement of higher residential densities — must be balanced against the preferences of householders for single-detached suburban communities. Attracting talented people to Ontario requires providing communities and housing choices sought by talented people.

The Golden Horseshoe will require most of the new infrastructure to be built in Ontario over the next 20 years. That is not to say that northern and rural parts of the province should be ignored. Although these areas will not need new infrastructure to support growth, the existing infrastructure will need to be maintained. Clearly, however, the emphasis must be placed on the Golden Horseshoe given its pivotal role in sustaining the prosperity of the entire province.

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3 STRENGTHENING PRODUCTIVITY GROWTH

INTRODUCTION

Productivity key to economic growth

This chapter focuses on Ontario's productivity performance and potential. As noted in Chapter 2, productivity growth is one of the key determinants of long-term economic growth projections. The role of business investment in supporting productivity growth was emphasized in that chapter.

Section I of this chapter deals with recent trends in Ontario productivity and income growth. Productivity gains are the only sustainable basis for rising real incomes.

Section II discusses five mechanisms through which business, government and employees can work together to influence productivity growth: developing a skilled and adaptable workforce; strengthening industrial research and development; providing productivity-enhancing infrastructure; ensuring effective business regulation; and providing competitive taxation.

> A nation's productivity performance, and its ability to make meaningful improvements, is dependent upon many different factors. These factors, or determinants of productivity, range from business decisions undertaken at the firm level in response to market and competitive forces to the structure, incentives and signals created by government policies.
>
> Source: Industry Canada, "Key Factors of Productivity," http://strategis.gc.ca.

SECTION I: ONTARIO'S PRODUCTIVITY AND INCOME GROWTH

This section discusses Ontario's productivity and income growth. Productivity is a measure that shows how much an economy can produce with each unit of input — for example, per hour worked.

Increased productivity means increased income

The key factor leading to rising GDP over time is productivity growth. Improved productivity means that workers, on average, are producing more real output and gaining more income by working the same number of hours. While there are several alternative measures of productivity, the one used in this report is *real GDP per hour worked in the whole economy*. It utilizes the most readily available data at the provincial level. Another advantage is that it is closely linked to *real GDP per person* (real GDP divided by total population), which is the most commonly used measure when comparing standard of living in different countries.

Productivity can rise through technological advances, investments that lead to more abundant and complex equipment for workers, and investments in the training and education of workers.

Alternative Definitions of Productivity Used by Economists

- **Real GDP per hour worked in the business sector** is the most commonly used definition in the United States, but no data are available for this measure at the provincial level.
- **Multifactor productivity** divides real GDP by the quantity of capital used, not just the quantity of labour, and is generally thought to be a measure of general technological progress and efficiency. It is particularly difficult to measure because of technical and conceptual problems in the estimation of the stock of capital.

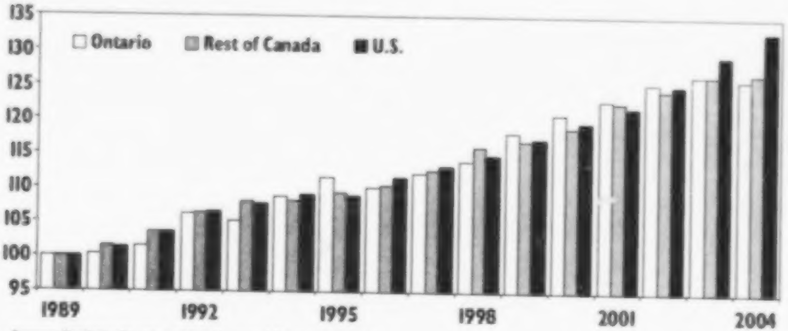
Ontario has had strong productivity growth

Ontario's growth in productivity has matched that of the rest of Canada, and (except for 2003 and 2004) has also matched that of the United States. In fact, Ontario's productivity increase relative to 1989 was slightly above the North American average as recently as 2002. In 2003 and 2004, Ontario's productivity growth was considerably lower, but this is likely to be a temporary slowdown caused by industrial restructuring resulting from the extraordinarily large increase in the value of the Canadian dollar, compounded by the adverse effect of the SARS outbreak and electricity blackout.

Ontario productivity keeps pace

The chart below shows an index of real GDP per hour worked for the economies of Ontario, the rest of Canada and the United States. The index is set at 100 in 1989 for each economy. The columns for 2004, the most recent year for which comparable data are available, show how much productivity has risen relative to the level in 1989. The data show that productivity rose by 26 per cent in Ontario, 27 per cent in the rest of Canada and 33 per cent in the United States from 1989 to 2004.

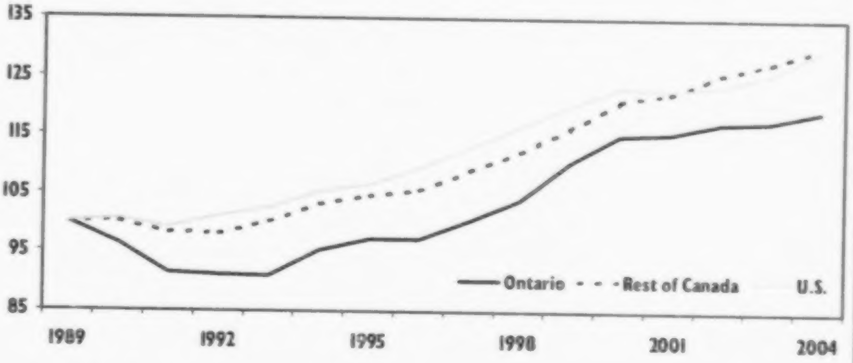
Productivity: GDP per Hour Worked (1989 = 100)



Sources: Statistics Canada and U.S. Bureau of Economic Analysis.

The chart below shows that since 1989 the rest of Canada, excluding Ontario, had growth in *real GDP per person* of over 30 per cent, somewhat higher than that of the United States. Ontario has been about 10 percentage points behind the United States. However, since 1992, Ontario's real GDP growth per person has largely matched those of the United States and the rest of Canada.

Real GDP per Person (1989 = 100)



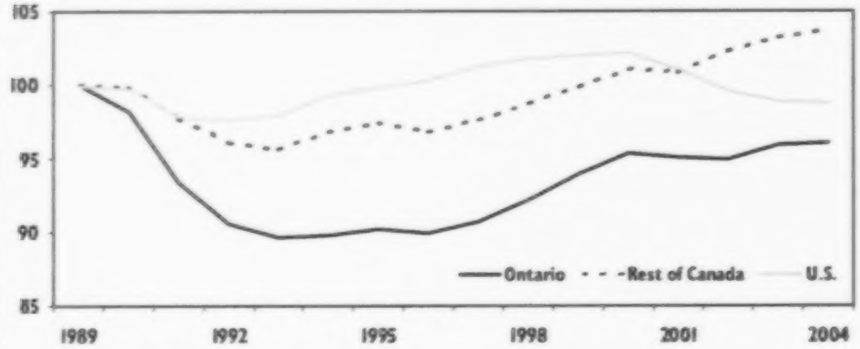
Sources: Statistics Canada and U.S. Bureau of Economic Analysis.

Throughout the 1980s, real GDP per person in Ontario was about equal to that of the United States, and well above the average in the rest of Canada. But the Ontario economy was more profoundly affected by the deep recession in the first half of the 1990s than the rest of Canada. The Ontario economy is a significant exporter of manufactured goods to the United States, so the simultaneous event of an overvalued exchange rate and the restructuring needed to adjust to the North American Free Trade Agreement (NAFTA) combined to create a shock that overwhelmed the capacity of the economy to adjust.

Ontario's level of productivity is still the highest of any Canadian province.[1] However, Alberta's GDP per person is considerably higher due to its higher employment-to-population ratio.

Employment is the area of performance in which Ontario did relatively poorly during the 1990s. The ratio of employment to population in 2000 was lower than it was in 1990. A large number of jobs were created during the second half of that decade. However, relative to the growth in the population, this did not fully make up for the large decline in employment that occurred in the first half of the decade.

Employment-to-Population Ratio (1989 = 100)



Sources: Statistics Canada and U.S. Bureau of Labor Statistics; population over age 15 in Canada and over age 16 in the United States.

Average hours worked lower than U.S.

The number of hours worked per person per year is also a significant factor in determining the real GDP produced per person. Productivity is measured in terms of real GDP per hour worked. Multiplying that figure by the number of hours worked per person provides the value of the real GDP per person. In Canada, the average hours worked per job is about five per cent less than in the United States. In Europe, it is even lower, as a result of shortened work weeks and longer vacations. For this reason, several European countries have considerably higher productivity than the United States, while having considerably lower GDP per capita.

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[1] Dale Orr, "Provincial Standards of Living: Who's Up, Who's Down — and Why," *Global Insight*, May 2005. Output is measured by real GDP, using 1997 as the base year for prices.

A Cautionary Note on Measuring Productivity

Comparisons of productivity should be used with caution. The discussion of productivity in this chapter is mainly about its growth rate. The actual level of productivity (e.g., the value of output per hour worked) at a point in time is also important, because it supports the absolute level of living standards. Statisticians have even more difficulty measuring the level of productivity than its growth rate. It is particularly difficult to compare productivity levels of different countries.

In an important 2005 study, Statistics Canada analysts found that there were differences between Canada and the United States in the way that the number of hours worked was calculated. They re-estimated the U.S. data on hours worked using the Canadian methodology, for the years from 1994 to 2002. Once this was done, they found that U.S. productivity growth over this period was no higher than Canada's. Moreover, the level of productivity (GDP per hour worked) in the United States was only about six per cent higher than in Canada.*

The level of GDP per person, by contrast, was about 20 per cent higher in the United States than in Canada. This is because employment relative to the size of the population is considerably lower in Canada than the United States. This lower employment rate is the result of a combination of factors, both structural and macroeconomic.

This Statistics Canada study did not break out results by province. However, as of 2002, other Statistics Canada data indicated that the level of Ontario's productivity (real GDP per hour worked) was about six per cent higher than the Canadian average. That would imply that Ontario's level of productivity was about equal to that of the United States.

Even if Ontario matches the average level of productivity in the United States, it can aspire to a higher level, such as that of the top U.S. states. With its high level of education and skills, Ontario has the potential to match the top jurisdictions in the world.

* J. Baldwin and J.P. Maynard, "The Output Gap Between Canada and the U.S.: The Role of Productivity, 1994-2002," Statistics Canada, *Canadian Economic Observer*, January 2005.

SECTION II: MECHANISMS TO INCREASE PRODUCTIVITY GROWTH

Strengthening productivity growth is critical to achieving higher incomes. This section reviews five mechanisms through which business, all levels of government and employees can together influence productivity and income growth: developing a skilled and adaptable workforce; strengthening industrial research and development; providing productivity-enhancing infrastructure; ensuring effective business regulation; and providing competitive taxation.

High-income jurisdictions are strengthening their capacity for innovation by improving their education systems; supporting research and innovation; and encouraging business investment, which strengthens their competitive positions.

Ontarians increase their incomes primarily by encouraging businesses to innovate to stay ahead of the competition — they must produce new products and services and adopt new processes and new technologies that meet market demands.

Everyone has role in productivity growth

Accordingly, the success of Ontario firms in attracting investment and creating jobs will depend on both the effectiveness of Ontario managers and their employees and on Ontario and Canadian government policies to encourage innovation, investment and productivity growth. It is also essential for them to ensure Ontario's workforce can meet or adjust quickly to new job responsibilities or new jobs.

1. The Contribution of a Skilled and Adaptable Workforce

One of the key roles of government is to provide education and training to ensure the availability of skilled workers to meet the needs of a growing economy and boost productivity. This applies to specific skills as well as to more general skills.

Economists refer to education and training as investment in "human capital" because it increases the productive potential of both the overall economy and the individual who receives it.[2]

Need for highly skilled workforce

One of the most important changes in the economies of developed countries has been an ongoing shift towards more highly skilled workers. This shift reflects, among other things, the consequences of technological change.[3] Advanced information and communication technologies, which are spreading throughout the economy, depend on high levels of literacy, numeracy and problem-solving ability.

Continuous improvement in education system

To maintain its skills strength in the next two decades, Ontario's education system will need to both adapt and improve continuously. Industries such as manufacturing have already expressed concern that Ontario is not prepared to meet the workforce challenges of the next two decades, including an inadequate number of workers in the skilled trades. As the service sector invests in more communications technology, and undergoes business process re-engineering, its workforce will also need more advanced skills. Aside from technical know-how, more general skills such as creative problem-solving, teamwork and the ability to adapt quickly to challenges in the workplace will be essential in all sectors of the economy.

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[2] Barbara Sianesi and John Van Reenen, *The Returns to Education: A Review of the Empirical Macro-Economic Literature*, (London: The Institute for Fiscal Studies), March 2002.

[3] European Monitoring Centre on Change, Sector Futures: Policies, Issues and the future of ICT, 2003

Skills Requirements by 2020

Future skills requirements identified by employers include:

- mix of creative problem-solving capabilities, technical know-how, business skills, and an ability to interact with colleagues and customers;
- higher degree of technical and technological expertise as production systems become more automated and more interconnected, and as workplaces incorporate advanced technologies such as nanotechnology, biotechnology, microelectronics and robotics;
- continued reliance on the skilled trades, but in combination with other technical business skills;
- greater reliance on manufacturing and product engineering, product and process design, and scientific research;
- multilingual and multicultural skills, as business operations expand on a more global basis;
- management skills in the fields of manufacturing processes, supply chains, product and knowledge development, financing, and global business; and
- an ability to adapt easily to constantly changing roles in a constantly changing workplace. The pace of technological change and the rapid response that will be demanded of the manufacturing enterprise of the future mean that all employees will not only have to be flexible enough to adapt to changes in their job, but also be willing and able to continuously upgrade their knowledge and skills on a path of lifelong learning.

Source: Canadian Manufacturers and Exporters, *Manufacturing 20/20: Building Our Vision for the Future*, 2005.

Governments, businesses and workers are considering how to make their education and training systems and labour markets as flexible as possible. They must not only anticipate rapid expansion or contraction of existing occupations, but must also prepare students and workers for new or redefined occupations. They must also consider how best to accommodate and retrain individuals who lose their jobs due to the rapid pace of change in the economy.

There are at least four ways in which workforce skills must be enhanced if Ontario is to reach its growth potential in the next two decades.

Higher learning needs to be flexible

First, Ontario's universities, colleges and training networks are expected to be responsive and flexible in meeting the needs of a changing economy. They play a crucial role in supporting productivity growth by providing the foundation education of skilled workers and contributing to increased workforce flexibility by educating in general skills such as critical thinking, writing and interpersonal communication. In addition, they make invaluable contributions to the generation of knowledge through research and development that, in turn, contributes to economic growth.

To maintain Ontario's human capital advantage in the next 20 years, Ontario will need to have responsive and up-to-date policies and programs to ensure that the postsecondary education and training system continues to produce graduates with leading-edge know-how.

Improve literacy skills

Second, more will have to be done to improve 21st-century literacy skills such as prose literacy, document reading, quantitative skills and problem-solving skills. A recent Organization for Economic Co-operation and Development (OECD) *Adult Literacy and Life Skills* report stated that in 2003, four in ten Canadian adults did not have adequate literacy skills for the modern economy.[4] These fundamental capabilities are a crucial underpinning for the required skills improvement of the current labour force.

Lifelong learning key

Third, as the labour force ages and its growth slows, more emphasis will be placed on widespread skills upgrading and on-the-job retraining of older workers. Industry will need to better anticipate changing skill needs and be responsive through retraining partnerships with institutions. Incentives are likely to be increased and labour regulation modernized to remove unnecessary barriers to flexibility in the workplace for employers and employees.

Fourth, Ontario will need faster and more effective labour-market integration of new Canadians. On average, the province welcomes about 125,000 immigrants annually — more than half the Canadian total. Immigrants now account for 70 per cent of Ontario's net labour-force growth and this share is projected to grow.

Better use of immigrants' skills

Despite a rise in the number of educated immigrants (73 per cent of immigrants aged 18-64 who arrived in Ontario between 1999 and 2004 had at least some postsecondary education credentials), Ontario faces significant problems in fully integrating them into the labour market. In general, new Canadians have a lower employment rate and a higher unemployment rate than non-immigrants.[5]

Underutilization of immigrants' skills leads not only to a missed economic opportunity for Ontario and Canada, but also to increased social costs from greater dependence on social services.

The major obstacles to faster immigrant adjustment and integration include insufficient recognition of foreign credentials, training and work experience; insufficient occupation-specific language ability; insufficient targeted training programs to bridge gaps in qualifications; difficulty in obtaining Canadian work experience; and insufficient information about employment opportunities and requirements. These are policy challenges that will require expanded effort over the next 20 years.

2. Strengthening Industrial Research and Development

R&D boosts growth

For Ontario's economy to grow and prosper in the future, Ontario companies will have to compete more on the basis of creating value for customers through innovation. The amount that companies spend on research and development (R&D) is one measure of innovation capacity.

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[4] "Learning a Living: First Results of the Adult Literacy and Life Skills Survey (2003)," Ottawa and Paris — Statistics Canada and Organisation for Economic Co-operation and Development, May 2005.

[5] At least one in four recent immigrants with a university degree who was employed between 1991 and 2001 held a job that required no more than a high school education — twice the proportion of those born in Canada. The unemployment rate for recent immigrants aged 25 to 54 with a university degree has been consistently at least triple the rate of those born in Canada. Source: Diane Galarneau and Rene Morissette, *Immigrants: Settling for Less?*, Statistics Canada, 2004.

Companies that devote a bigger slice of their revenues to R&D are more likely to introduce new products, employ more highly skilled people and adopt advanced technologies.[6] They are more likely to cluster in places with large and diverse pools of research talent.[7] The entire economy grows faster when more companies perform more R&D.[8]

U.S. leads R&D

Ontario accounts for the largest share of industrial R&D expenditures in Canada, including R&D in industries that produce communications equipment, pharmaceuticals, and semiconductor and other electronic components.[9] Overall, however, the level of industrial R&D spending in Ontario trails that of its U.S. neighbours. As well, the number of companies that perform R&D in Ontario is shrinking. Industry is spending less on research and employing fewer researchers.[10]

Other jurisdictions have experienced similar declines, but Ontario is especially vulnerable because of the global downturn in the computer and electronic products industry, which in 2001 accounted for 46 per cent of the province's industrial R&D expenditures or roughly double its share in the United States. As well, Ontario's large automotive sector, which is the top R&D performer in the United States, has been a relatively weak R&D performer in Canada.[11]

Yet, industrial R&D is constantly changing and evolving in response to markets and competitive pressures. Among multinational companies, there is an increasing trend towards redistributing their R&D effort away from head office and into operating divisions and foreign affiliates. Less R&D is being done in large corporate labs, and more is being outsourced to other companies and universities at home and abroad. Companies are willing to go wherever necessary to access top R&D talent. Increasingly, however, they are making their R&D investments in developing countries.[12]

Trend to internationalize R&D

Overall, this internationalization of industrial R&D represents an opportunity for Ontario to attract more R&D investment because of the province's recognized strengths in research excellence and scientific talent, in addition to offering a low-cost business environment and proximity to the United States. More industrial research in Ontario is expected to be done by small companies run by business-savvy researchers, many of whom will retain links with the academic sector through local industry-academic networks. Ontario's cultural diversity is expected to also help Ontario-based research companies to expand into foreign markets and establish strategic alliances across global networks.

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[6] Fred Gault (ed.), European Commission (2003), *Entrepreneurial Innovation in Europe*; (2003), *Understanding Innovation in Canada's Industry*, School of Policy Studies.

[7] Taylor Munn-Venn and Roger Voyer, *Clusters of Opportunity, Clusters of Risk*, Conference Board of Canada, Ottawa, 2004; Barak S. Aharonson and Joel A. C. Baum and Maryann P. Feldman, "Industrial Clustering and The Returns to Inventive Activity: Canadian Biotechnology Firms 1991-2000," Working Paper 04-03, Danish Research Unit for Industrial Dynamics (DRUID), 2004.

[8] OECD, *The Sources of Economic Growth in OECD Countries*, 2003.

[9] Statistics Canada, *Industrial Research and Development 2004 Intentions (with 2003 Preliminary Estimates and 2002 Actual Estimates)*, 2004.

[10] The Impact Group, *The Demographics of Research in Canada, 1994-2004*, 2005.

[11] Finance Canada, *Canada's Low Business R&D Intensity: The Role of Industry Composition* (Working Paper 2005-03), 2005.

[12] The Economist Intelligence Unit, *Scattering the Seeds of Invention: The Globalization of Research and Development* and *Harnessing Innovation: R&D in a Global Growth Economy*, 2004.

3. Providing Productivity-Enhancing Infrastructure

This section considers the importance of productivity-increasing infrastructure in enhancing productivity. Aspects of the key role of infrastructure — specifically, public transit, electricity supply and water quality — were also discussed in Chapter 2.

Infrastructure need shaped by geography

The need for infrastructure has unique attributes in different jurisdictions because specific locations convey specific competitive advantages. It is often shaped by geography and the nature of natural resources available.

Ontario has prospered, to a great extent, because of its location near the centre of the affluent North American economy. This has helped make Ontario an attractive place to invest and do business. Ontarians benefit from ongoing investment that has resulted in some of the most productive and high-quality business in the world.

Maintaining locational advantage a challenge

However, the importance of geography is gradually receding as communication and transportation costs fall. Changes in information and communications technology, such as the Internet, are allowing companies to rethink the location of many formerly integrated operations. These changes create ongoing challenges for industries and jurisdictions around the world. For Ontario, the impact of these global trends has been compounded by increased concern over border security since the terrorist attacks against the United States on September 11, 2001.

One way for an advanced economy such as Ontario to maintain its competitive locational advantage is through the provision of reliable, well-maintained and modern infrastructure. Effective resolution of border-security concerns could ultimately result in enhanced advantage for Ontario manufacturers, particularly if strategic investments in border-crossing infrastructure are made.

Border-crossing infrastructure is only one kind of infrastructure needed in an advanced economy. Goods movement requires an effective transportation system, including public transit to minimize gridlock. Ready access to reliable energy, telecommunications and safe water are also essential. Increasingly, business also looks for locations with a high quality of life.

One mechanism to help ensure that infrastructure spending is available when needed and spent on the highest priority is part- or full-cost recovery. Careful planning and timely implementation are also necessary to ensure that the jurisdiction continues to support businesses that are at the competitive forefront.

Infrastructure increases productivity

Because of the importance of public infrastructure, it is of concern that its share has fallen from 8 per cent of Canada's total capital stock in the 1960s and 1970s to about 5.5 per cent in 2001. Economic studies have documented a significant positive impact of public infrastructure on the productivity of private companies. A recent estimate is that, on average, each $1 invested in Canadian public infrastructure creates private cost savings of 17 cents per year, implying a very high rate of return.[13]

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[13] Tarek M. Harchaoui, Faouzi Tarkhani and Paul Warren, "Public Infrastructure in Canada: Where Do We Stand?" Statistics Canada Catalogue no. 11-624-MIE, No. 005, 2003.

Ontario Infrastructure Investment Needs

Ontario's public infrastructure, much of it built in the 1950s and 1960s, is aging and will require rehabilitation and/or replacement over the next 30 years. Population growth also fuels the need for investments to build roads, hospitals, schools and other public infrastructure. The following are expert estimates of infrastructure needs by sector, totalling nearly $100 billion over the next 10 to 15 years.

- In 2005, the Federal-Provincial Task Force on Urban Transportation identified investment needs for Ontario of:
  - ☐ $10 billion for municipal roads and bridges over the next 10 years;
  - ☐ $18 billion for provincial highways over the next 10 years; and
  - ☐ $10 billion for transit over the next five years, which corresponds to the five-year estimate of transit investment needs made by the Canadian Urban Transit Association in 2004.
- In "Watertight: The Case for Change in Ontario's Water and Wastewater Sector," the 2005 report of the Water Strategy Expert Panel, investment needs for Ontario's municipal water and wastewater systems were estimated at $34 billion over the next 15 years.
- In *Ontario: A Leader in Learning*, the 2005 report of the Postsecondary Review, the Honourable Bob Rae recommended that an investment of $5 billion be made in colleges and universities for facility renewal, expansion and new equipment over the next 10 years.
- The Ontario Hospital Association estimated in 2003 that an infrastructure investment of $7 billion to $9 billion would be required over three years to address hospital growth and renewal needs.
- In 2004, the publication *Good Places to Learn: Renewing Ontario's Schools* estimated that total infrastructure requirements of $5 billion to $9 billion will be needed for repair and rehabilitation in Ontario's schools.
- Toronto Community Housing estimates that $900 million in capital investments for affordable housing will be required in Toronto alone over the next 10 years.
- Additional infrastructure investments will be required in the justice sector, for cultural and tourism agencies, for economic development, and for natural resources and other environmental capital.

4. Ensuring Effective Business Regulation

Capital more mobile

A supportive regulatory environment helps companies and industries to operate and compete successfully. As capital is becoming more mobile globally, seeking the best returns at lowest risk for investors, jurisdictions are expected to compete by emphasizing effective business regulation that achieves societal goals, with the right balance between certainty and flexibility for existing businesses and potential new employers.

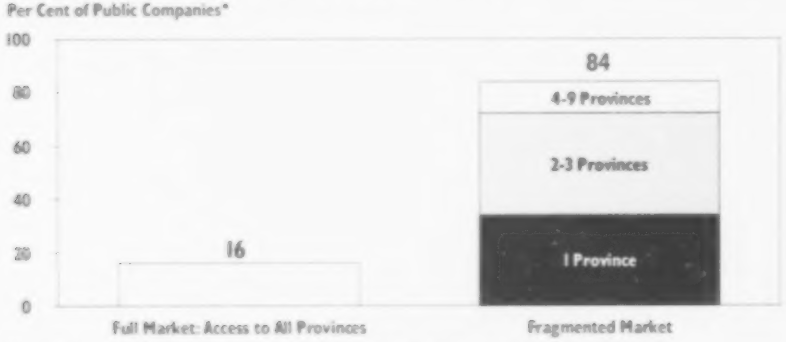
In addition, as global markets become more open and capital becomes more mobile, steadily improving financial services regulation can complement increasing sophistication of financial management practices such as improved risk management, accounting, financial reporting and auditing. Together, they are expected to provide better information and protection to consumers and investors, thereby improving the allocation of saving and investment funds, with a positive impact on economic growth.

Continual improvement to regulation

Canada and Ontario have a positive reputation for sound business regulation. The World Bank recently released a study of business regulations and how they affect job creation. Canada ranked fourth best in the world, only behind New Zealand, Singapore and the United States.[14] But with continuing international economic integration, and other countries working to improve their own regulatory frameworks, the Canadian and Ontario advantage could erode. In future, governments are expected to respond by continuing to implement better regulation designed to offer more effective information and protection to consumers, workers and the environment, at minimal cost to the economy.

For example, Canada is the only developed nation without some form of national securities regulator. More effective financial market regulation could contribute in making Canadian capital markets deeper and more liquid, improving small and medium enterprises' (SME) access to capital, and possibly reducing the advantage of U.S. SMEs in accessing low-cost capital. As the graph below shows, only 16 per cent of public companies in Canada raise capital in the national market, which includes all provinces. Virtually all SMEs raise capital in only a few provinces. The Canadian market is itself only seven per cent of the U.S. market for equities. While high-quality U.S. SMEs can access the many specialist investors that are readily available in large national markets, high-quality Canadian SMEs are unlikely to benefit from wide access to knowledgeable investors.

Per Cent of Public Companies in Canada Raising Capital in One or More Provinces



* Issuers raising capital by prospectus and becoming reporting issuers in one or more provinces.
Source: Ontario Ministry of Finance based on OSC data.

5. Providing Competitive Taxation

In recent economic policy discussions in Canada, one of the factors mentioned most often as needing attention is tax rates. Comparison of Canadian tax rates is frequently made against international averages — and, in particular, against U.S. tax rates. It is argued that differential rates are a deterrent to investment in Canada in recent years.

Taxation needs to remain competitive

Many countries around the world, including Canada, have been cutting tax rates on corporate capital in the hopes of attracting more investment. While it is generally agreed that lower tax rates encourage more investment, the magnitude of the impact is subject to debate.

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[14] World Bank, *Doing Business in 2006: Creating Jobs* (Washington, September 2005)

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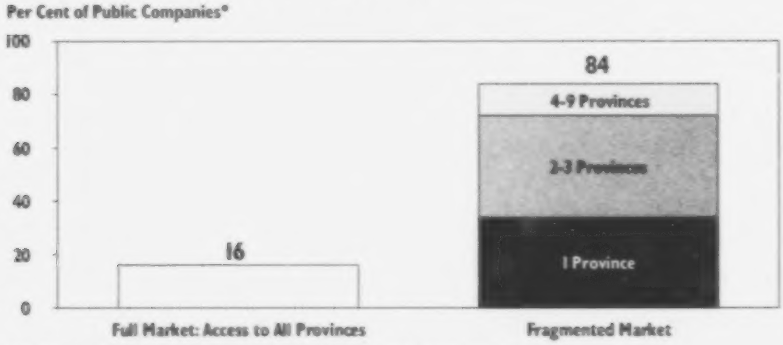

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Some studies argue that cutting taxes on corporate investment has a major impact. Others note that these taxes represent only a small proportion of the total operating costs of corporations, and in the long run tend to be offset by changes in the prices of less mobile factors of production, such as land and labour. While the majority of studies find that lower corporate tax rates do increase investment, most of these find that the magnitude is relatively low.[15]

A corporate income tax change is just one of the tax policy options available to governments. Other avenues include changes to capital taxes, changes to personal income taxes and changes to consumption taxes such as the retail sales tax, among others.

Just as the evidence is mixed on the size of the impact of cutting corporate taxes, the debate on which specific tax change would have a greater economic impact is far from settled. For example, a recent Federal Department of Finance working paper[16] surveying previous studies on the effect of tax policy on economic activity suggests that capital and labour tax cuts have a greater impact on investment than a cut in consumption taxes. However, it acknowledges that the results depend crucially on the type of model used and the setting in which the model is applied. All this points to the importance of future research.

Looking more broadly, there are countries with higher tax rates that have good economic growth performance, and, conversely, lower tax-rate countries that have had poor growth. This points to the fact that investment decisions take into account a range of locational characteristics. However, it is generally agreed that taxes should not be viewed in isolation, but as one of several important factors affecting investment.

Taxes one of many factors

Among the most important offsets to taxation is the value of government services received. For example, the international consulting firm KPMG regularly calculates the total cost of doing business in different jurisdictions, including all taxes charged for business.[17] This takes into account factors such as land prices, wage rates and benefit costs, as well as the benefit to companies in Canada from government-paid health care. Besides explicit cost factors, firms also consider such things as availability and quality of labour and services.

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[15] K.J. McKenzie and A. J. Thompson, "Taxes, The Cost of Capital, and Investment: A Comparison of Canada and the United States," Working Paper 97-3, Prepared for the Technical Committee on Business Taxation; and R. Chirinko et al., "That Elusive Elasticity: A Long-Panel Approach to Estimating the Capital-Labor Substitution Elasticity," 2002.

[16] Maximilian Baylor, "Ranking Tax Distortions in Dynamic General Equilibrium Models: A Survey," Working Paper 2005-06, April 2005.

[17] KPMG, "The CEO's Guide to International Business Costs — 2004 edition," www.competitivealternatives.com.

Marginal Effective Tax Rates

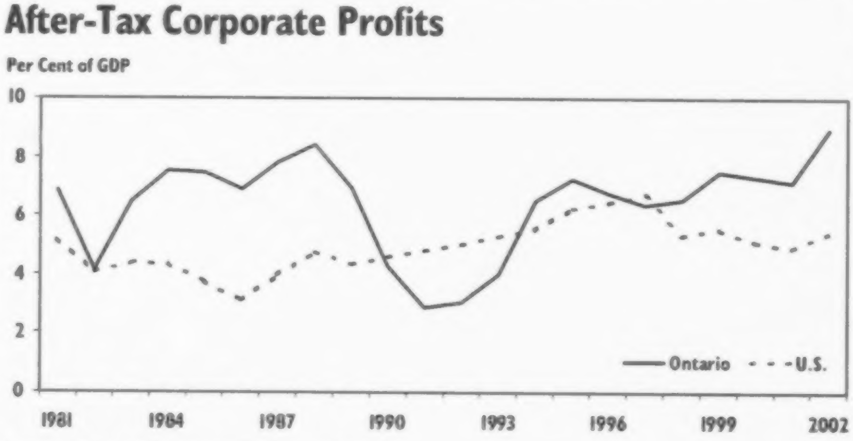
The United States has higher corporate tax rates than Ontario if statutory rates on the books are examined. However, many analysts argue that a marginal effective tax rate (METR) on capital is the relevant measure, and that it is much lower in the United States when factors such as depreciation allowances and accounting rules for inventories are taken into account.

Measuring the METR is complex, and there is a wide range of estimates. For example, the U.S. Department of Treasury estimated that the METR in the United States was about 26 per cent (federal taxes only), while analysts at the C.D. Howe Institute estimate that it may be as low as 23 per cent (including state taxes).*

* U.S. Department of the Treasury, http://www.treas.gov/press/releases/js1167.htm; and D. Chen and J. Mintz, "How to Become Seductive: Make Canada More Investment-Friendly," C.D. Howe Institute e-brief, February 2005.

Ontario companies profitable

Looking at the actual experience of companies in Ontario, it is evident that they have been highly profitable on average. After-tax corporate profits as a share of GDP have been on a rising trend, and have been considerably higher in Ontario than in the United States in recent years.



Sources: Statistics Canada and U.S. Bureau of Economic Analysis.

Tax rates are one among several important factors affecting investment. They have to be considered as one element of a well-balanced set of government policies, which includes education, health care, infrastructure, regulatory measures and overall quality of life.[18] All of these factors affect the desirability of doing business in Ontario.

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[18] Microsoft CEO Bill Gates recently commented that high technology industries "are far more sensitive to the quality of talent in the area than they are to tax policies," http://archive.stateline.org/html/ 2005/08/17/214_42.html.

CONCLUSION

Increasing productivity growth is one of the most important challenges facing the Ontario government, businesses and employees. It is influenced by many factors, both external and internal to Ontario. One of the critical mechanisms to increase incomes further is to promote innovation, which will enable companies to invest in new products and services as well as reduce costs.

Higher education and training, good infrastructure, reliable energy, competitive taxation, and regulation of business and financial institutions also have an important role in encouraging productivity.

The Ontario economy has had to face some major adjustment challenges in the past two decades, including the North American Free Trade Agreement and exchange-rate volatility, which have a greater impact on Ontario than on most other provinces. This has led to growth performance that, on average, has been below earlier historical trends. The positive implication of this is that the Ontario economy still has a considerable amount of unused potential, particularly its highly skilled workforce. With the right combination of policies and external environmental factors, Ontario can look forward to considerably stronger growth in the coming decades.

4 DRIVERS OF FUTURE HEALTH CARE COSTS

INTRODUCTION

This chapter focuses on health care because it is expected that this sector will represent the most significant fiscal challenge for Ontario over the next 20 years.[1] Health spending is projected to be the fastest-growing component of the provincial budget — rising faster than revenue growth. As a result, health's share of government program spending is projected to increase from 45 per cent in 2004-05 to about 55 per cent in 2024-25, creating pressure for tighter constraints on other areas of public spending.

This chapter provides an analysis of the key drivers of provincial government spending on health care in Ontario. Section I provides an overview of past trends in health care spending and Section II discusses the key factors that are projected to contribute to growth in health care spending, including the assumptions used in the long-term base-case projection.

Health costs grow fastest

The base-case scenario in this report projects an average annual growth rate of 6.0 per cent in provincial government health spending over the 2009-10 to 2024-25 period, a rate faster than the average annual growth rate of 4.8 per cent projected for the province's gross domestic product (GDP). This would mean that public spending on health care would consume a growing proportion of the province's GDP. Its share of Ontario's GDP is projected to rise from about six per cent in 2009-10 to about seven per cent in 2024-25.

Section III discusses the impact of demographics on health care costs. Continuing growth in health care spending reflects both Ontario's growing and aging population. Demographics will account for 36 per cent of the projected annual growth in health care spending.

Section IV discusses the impact of utilization on health care costs. Changes in health care utilization factors are complex and unpredictable over extended periods. Therefore, utilization represents a greater risk to the government's future fiscal situation than may be captured in the current projection.

Given the sensitivity of the Province's fiscal position to the utilization rate used, it is also important to examine alternative health care cost scenarios based on higher or lower utilization growth than used in the base-case projections. These are discussed in Chapter 6.

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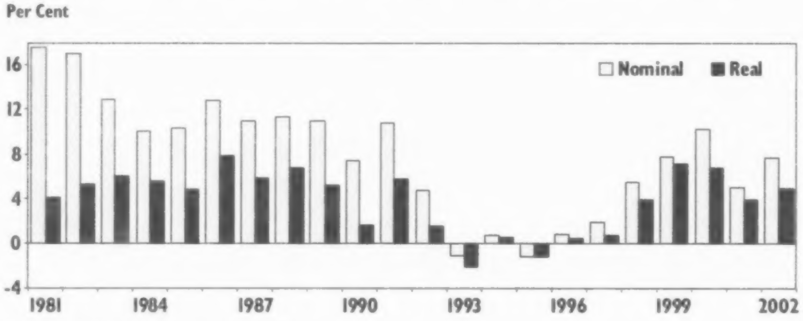
[1] The long-term analysis of health care spending in this report discusses only the Ontario Government's spending on health care. Provincial government spending accounts for over 60 per cent of total health care spending in Ontario.

SECTION I: OVERVIEW OF PAST TRENDS IN PROVINCIAL GOVERNMENT HEALTH CARE SPENDING

Trend is of continuous growth

Rising health care costs have been a challenge faced by governments in Ontario and around the world for over 20 years. In Ontario, between 1980 and 2002,[2] provincial government health care spending grew at an average annual rate of 7.8 per cent. A large component of historic growth has been inflation. The overall trend has been of continuous growth, with the exception of one period in the early to mid-1990s.[3] Over the last five years of the period, the annual rate averaged 7.3 per cent.

Percentage Change in Provincial Government Health Expenditures, Nominal and Real, Ontario, 1981-2002



Note: Real expenditures are expressed in 2002 constant dollars.
Sources: Canadian Institute for Health Information and Ontario Ministry of Finance.

The base-case fiscal scenario presented in Chapter 6 assumes that provincial government health care costs will rise, on average, by 6.0 per cent annually from 2009-10 to 2024-25. This is roughly in line with growth in government health spending in Canada projected in a 2003 study by the Conference Board of Canada.

SECTION II: KEY COST DRIVERS OF ONTARIO'S HEALTH CARE SYSTEM

The assumptions underlying the projection of provincial government health care costs are based on three key cost drivers of Ontario's health care system.

Population growth and aging contribute to costs

- **Demographics:** Ontario's growing and aging population will continue to exert pressure on health care costs and is projected to account for over one-third of the total average annual increase in health care spending. This driver is analyzed in greater detail in the next section. The analysis shows that the growth in health care spending due to demographics over the projection period will be similar to the past. However, towards the end of the projection period, the annual contribution of aging to health care costs will exceed the impact of population growth as the oldest cohorts of the baby boom age into their seventies and move into higher health cost categories.

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[2] 2002 is the latest year for which final data are published by the Canadian Institute for Health Information.

[3] Over the early 1990s, Ontario's economy entered a period of severe recession, and the federal government reduced its health care transfers to the provinces. Following this period, growth in health care spending resumed as the Ontario economy improved, and the share of provincial program spending allocated to health care continued to grow.

- **Utilization:** Section IV presents an analysis of utilization. Utilization captures the effects of a broad range of factors that affect the amount of health care services. In the base-case scenario, utilization is assumed to increase at a constant annual rate of 1.5 per cent. This is in line with past patterns and with projections of future growth in utilization assumed in other studies. Utilization growth is projected to account for one-quarter of the overall average annual increase in health care spending.

Utilization Definition

In this analysis, utilization means the quantity of provincially funded health care used per person within each age group. For example, this would include the number of prescriptions filled by people between the ages of 65 and 74 or the number of doctor visits by people in the 15-24 age group.

As a result, the growth in utilization refers to the increase in the consumption of provincially funded health care goods and services over and above the increases driven by population growth, aging and inflation.

- **Inflation in the Health Care Sector**: Inflation refers to the persistent rise in the average prices of goods and services. It is usually measured by the consumer price index (CPI), which tracks changes in the price of a group of goods and services representative of the entire economy. It can be expected that inflation in the health care sector will be higher relative to inflation in the economy as a whole, due to the labour-intensive nature of health care services. Reflecting these factors, average annual inflation in the health care sector (2.2 per cent) is projected to be higher than consumer price increases (2.0 per cent).[4] However, inflation in the health care sector is not examined in detail as a cost driver because its impact is mostly offset by inflationary pressures on revenues. Furthermore, inflation is not expected to rise to the significantly higher levels witnessed in the 1980s.

Components of Provincial Government Health Care Spending Growth

Cost Driver	Estimated Past Impact 1980-81 to 2000-01	Base-Case Projection 2009-10 to 2024-25
	Average Annual Growth (per cent)	
Demographics	2.2	2.2
Growth	1.5	1.1
Aging	0.7	1.1
Utilization	1.4	1.5
Inflation	4.0	2.2

Source: Ontario Ministry of Finance.

Note: Historical effects of key cost drivers on health care spending have been modelled by the Ministry of Finance using Health Canada data because the Canadian Institute for Health Information (CIHI) does not publish health spending by age group for the period before 1998. These data were collected by Health Canada, with significant contributions from CIHI's NHEX database.

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[4] While the gap between health and general inflation has varied in Ontario — at times higher than assumed here — past increases in health care prices may, in part, be attributable to increases in utilization, which is examined separately in this report.

SECTION III: DEMOGRAPHICS AS A HEALTH COST DRIVER

3.1 million more Ontarians by 2025

Ontario's population growth is projected to slow over the period, from 1.3 per cent in 2005-06 to 0.9 per cent in 2024-25. Over the next 20 years, population growth will average 1.1 per cent annually, compared to average annual growth of 1.5 per cent over the past 20 years. However, the resulting absolute increase in population to 2025 is projected to be 3.1 million, almost equivalent to that of the past 20 years.

As discussed in Chapter 1, slowing population growth will be accompanied by the acceleration of the population aging trend of Ontario's population as baby boomers begin to turn age 65 starting in 2011. The baby boom generation, which comprises ages 40-59 in 2005, will reach ages 60-79 in 2025. The share of seniors will increase from 13 per cent of the population in 2005 to almost 20 per cent in 2025.

The rise in the number of seniors over the projection period coincides with the long-term trend of seniors living longer. The steady decline in mortality rates at older ages observed over the past several decades is expected to continue. This would have the effect of continuing the trend of successive cohorts reaching older ages where health care costs are highest.

The relationship between age and health care costs is discussed below, followed by an analysis of the contribution of demographics to health care spending.

Population Aging and Health Care Costs

Above-average spending on seniors

The impact that aging will have on the health care system and health care costs has been of concern for many years because use of provincial health care rises rapidly after age 65. Most of a person's lifetime health costs occur in the later years of life. With more people in the older age cohorts, the overall cost of providing health care is expected to rise.

As shown in the table on the next page, per-capita provincial government health spending for seniors is over three times higher than the average for the total population. For seniors over age 85, health care expenditures are nearly eight times higher.

Per-Capita Provincial Government Health Spending, by Age Group
Ontario, 2002, Current Dollars

Age Group	Spending Per Person ($)
<1	6,472.2
1-4	936.5
5-14	735.2
15-44	1,280.3
45-64	2,055.0
65+	**7,723.4**
65-74	5,203.4
75-84	8,929.8
85+	17,052.3
Total	**2,238.9**

Sources: Canadian Institute for Health Information and Ontario Ministry of Finance.

Notes: CIHI attributes most health expenditures to their users, while the rest are distributed according to population share. Health Canada attributes a larger share of expenditures according to estimated use, by age and sex. The base-case scenario uses data based on the Health Canada methodology.

Higher health expenditures by the public sector for seniors compared to other age groups are explained in part by the wide range of programs and services that provincial and territorial governments primarily direct to seniors — particularly access to long-term care facilities, prescription drug benefit plans and extended health care services. An additional explanation is the higher death rates for older age groups. Studies have shown that over the course of an individual's lifetime, the greatest amount of spending on health care services will usually occur within the last year of life.[5]

Contribution of Demographics to Health Care Spending

Looking at the past is a useful starting point for gauging the share of health spending growth accounted for by population growth and the share accounted for by shifts in the age structure of the population.

Population growth and aging important drivers

Demographics have been an important driver of health care spending. Over the period from 1980-81 to 2000-01, the average annual rate of growth in provincial government health spending was 7.8 per cent.[6] Analysis separating the effects of different cost drivers on the growth of health care spending produces estimates that population growth generated 1.5 per cent growth and aging produced 0.7 per cent, for a combined demographic effect of 2.2 per cent annual growth over this period. Increases in utilization and inflation accounted for the remainder of the increase, contributing 1.4 per cent and 4 per cent respectively.

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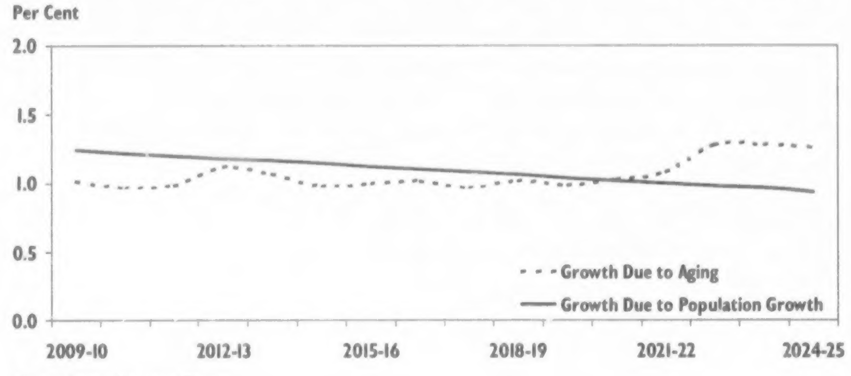
[5] Pierre Moïse and Stéphane Jacobzone, "Population Aging, Health Expenditure and Treatment: An ARD Perspective." *A Disease-based Comparison of Health Systems – What Is Best and At What Cost?*, Part III, Chapter 10, OECD, 2003, page 167.

[6] Historical effects of key cost drivers on total health care spending have been modelled using Health Canada data as the Canadian Institute for Health Information does not publish health spending by age group for the period before 1998.

Demographics will continue to be an important driver of health care costs. Over the 2009-10 to 2024-25 projection period, the average annual rate of growth in provincial government health spending is projected to be 6.0 per cent. Health care cost growth due to population growth is projected to be 1.1 per cent and aging is also 1.1 per cent, for a combined demographic impact of 2.2 per cent per year. This average annual growth in health care spending from demographic effects is comparable to the estimated annual contribution of demographics over the past period discussed above.

Impact of Demographic Factors on Projected Provincial Government Health Expenditure Growth



Source: Ontario Ministry of Finance.

While each of the demographic influences — population growth and aging — is estimated to account for 1.1 percentage points, on average, over the period, the contribution of population growth will steadily decline, reflecting the slowing of population growth. The contribution of population aging will rise towards the end of the projection period as the oldest cohorts of the baby boom move into their seventies and into higher average health costs. By the end of the projection period, aging will account for almost 60 per cent of the demographic impact on health expenditure growth.

Other research confirms impact

Several studies estimate the impact of demographics on the future growth of health care costs for Canada. The Conference Board of Canada forecasts that demographics will contribute 1.7 percentage points to the annual growth in provincial and territorial health spending between 2001 and 2020. This is broken down into 0.9 percentage points due to population growth and 0.8 percentage points due to aging. The Canadian Institute for Health Information (CIHI) finds that aging will account for no more than one percentage point of future growth in health care expenditures for Canada between 2002 and 2026. A Romanow Report discussion paper (Hogan and Hogan, Romanow Commission Discussion Paper No. 25) finds that population aging will be responsible for annual growth in per-capita health expenditures of 0.9 percentage points between 1998 and 2030.

It is important to note that the demographic analysis in this section measures only aging and population growth effects, holding health care utilization in all given age groups constant over the projection period. In the following section, health care utilization and the factors likely to cause it to grow in the future are examined.

SECTION IV: UTILIZATION

This section discusses the impact of utilization on health care costs. How population growth and aging interact with increased use of the health care system through utilization factors such as medical discoveries will ultimately determine the full extent of real growth in provincial health care expenditures. This section examines the historical effects of utilization on total health care spending, outlines the basis for the utilization assumption in the base-case projection and discusses some of the more important factors expected to affect utilization over the projection period of this report — 2009-10 to 2024-25.

Utilization growth uncertain

Utilization is assumed to grow in the base case at a constant rate of 1.5 per cent per year during the 2009-10 to 2024-25 period. However, there is a high degree of uncertainty attached to this assumption. Medical and information technologies are advancing rapidly, sometimes in completely unexpected ways. In addition, the demands that people place on the health care system will be affected by changes in factors such as the underlying health of the population, and people's expectations regarding health at each stage of life. As governments around the world attempt to provide the best possible health care services to their populations given their available financial resources, these key factors have the potential to drive up costs significantly, but they could also help to moderate cost pressures.

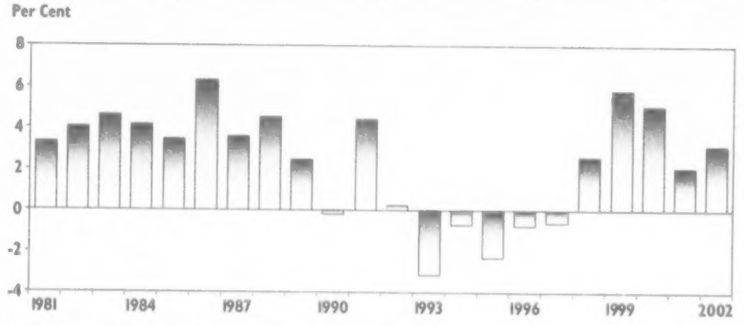
Contribution of Utilization to Health Care Spending

Analysis of provincial government spending from 1980-81 to 2000-01[7] indicates that utilization increased by an annual average rate of 1.4 per cent over this period. This compares with a 7.8 per cent annual average growth rate for total provincial government health care spending.

Changes in utilization have varied

However, changes in utilization do not tend to follow a readily predictable or smooth path over time. The chart below shows the historical growth of provincial government health care costs in real per-capita terms (that is, after adjusting for inflation and population growth). The effect of population aging alone is still present, but since this adjustment process is very gradual and slow, the large fluctuations are primarily due to changes in utilization rather than changes in aging.

Percentage Change in Provincial Government Real Per-Capita Health Expenditures, Ontario, 1981-2002



Sources: Canadian Institute for Health Information and Ontario Ministry of Finance.

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[7] Twenty-year period to the latest available Health Canada data.

A projected growth rate for utilization of 1.5 per cent annually over the 2009-10 to 2024-25 projection period is in line with the historical rate identified in the previous section, and is consistent with the results of other researchers.

Growth in utilization widely projected

Most other studies that project future health care spending also assume an annual increase in the utilization rate of about one to two per cent. For example, the Conference Board of Canada projects that utilization will account for 0.9 percentage points of the annual growth in provincial and territorial health spending between 2001 and 2020 in Canada. A Romanow Report discussion paper (Hogan and Hogan, Romanow Commission Discussion Paper No. 25) assumes that factors other than demographics and inflation will be responsible for annual growth in per-capita health expenditures of 2.0 per cent between 1998 and 2030.

Analysis of Key Factors Affecting Utilization

The following section examines some of the key factors that are expected to affect the utilization of health care services in Ontario. These factors include advances in medical technology, the underlying health of the population and the adoption of information management and communications systems.

Advances in Medical Technology

Technological advances drive demand and costs

Over the past 20 years, advances in medical technology have substantially expanded opportunities for Ontario's health care system to enhance the length and quality of people's lives, as well as their ability to remain in the workforce. These advances have come in the form of breakthrough technologies, in new uses for existing therapeutic and diagnostic technologies, and in incremental improvements.

It is generally recognized that advances in medical technology have become a significant driver of health care spending. This is supported by research such as the preliminary finding of the Australian Productivity Commission's *Impacts of Medical Technology in Australia*.[8]

Some of these new technologies become cost drivers because they are very expensive and provide treatments where none previously existed (for example, an innovative new drug to prolong the life of someone with a previously untreatable fatal disease). In this way, these technologies expand the range of services provided by the health care system.

New treatments can stimulate demand

Other technologies can become cost drivers in spite of the fact that they improve the efficiency of the health care system (e.g., advances in joint surgery). This occurs because a new treatment that reduces hospital time and is less risky for the patient tends to expand the demand for the new treatment. In many cases, this growth in demand surpasses the savings in per-patient costs.

The CIHI reports that studies of specific health treatments, such as for cataracts, heart attacks and breast cancer, find that while technological growth tends to generate better efficiency of health spending, in terms of health outcomes per dollar spent, it tends to raise total spending as new technologies allow more patients to be treated.

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[8] Australian Productivity Commission, *Impacts of Medical Technology in Australia*, Progress Report, 2005, section 10.1.

Boomers will expand market

It is not possible to predict what breakthrough technologies will emerge over the next 20 years, but the opportunities for more effective health care treatments will continue to expand and pose challenges for the financing of health care. For example, significant advances are possible based on the human genome and diagnostic technologies. At the same time, the aging of the baby boomers will rapidly expand the market for health technologies and the diffusion of health information will tend to raise public expectations for the availability of treatments.

As new technologies become available, integrating them into the health care system in a rational and cost-effective manner has become a significant challenge for governments around the world. The capacity to evaluate the cost-effectiveness of medical technologies, both when they are introduced to the market and as they are applied over time, will be critical to getting the most benefit from new technologies in the future.

Underlying Health of the Population

The underlying health of the population is the general state of physical well-being of individuals in the absence of medical intervention. As such, the stronger the underlying health of the population, the lower the requirements for medical interventions to maintain any given level of health.

Better health can mean lower costs

Lifestyle and environmental effects are important determinants of the underlying health of the population at any given age. Expectations, which tend to rise as people perceive a general increase in population health, also play a key role in the demand for health care services.

International research on historical trends suggests that people are generally living longer, healthier lives. In particular, people who experience a relatively high-cost period of severe disability towards the end of their life are tending to experience this at more advanced ages. Some long-term fiscal projections suggest modest savings from these trends. For example, research from the United Kingdom projected that these factors would generate a 13 per cent decrease in public long-term care spending over 50 years (i.e., 0.24 per cent per year).[9]

However, forecasting the net effects of lifestyle and environmental factors on the underlying health of the population is complicated and there is no consensus among researchers as to the net impact of countervailing forces at work. For example, exposure to cigarette smoke and certain toxic substances is much less common than it used to be, but concerns about smog are increasing and medical experts are sounding alarms about rising obesity and inactivity in Ontario's population. The latter has been linked to type-2 diabetes, cardiovascular diseases, hypertension, stroke, gallbladder disease and some cancers.[10]

A 2005 CIHI report highlighted the link between obesity and the demand for joint-replacement surgery. It would therefore seem logical that advances in these areas could be achieved by healthy lifestyles aimed at reducing obesity and inactivity.

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[9] HM Treasury, *Long-Term Public Finance Report: An Analysis of Fiscal Sustainability*, November 2002, page 16.

[10] CIHI Canadian Population Health Initiative, *Improving the Health of Canadians — Summary Report*, 2004, page 24.

As was the case with smoking, both the public and private sectors are starting to react to alarm bells raised by the medical community. The success of their efforts, as well as strategies to address still-unknown health risks emerging over the next several decades, may become important determinants of future health care costs.

Rising health care expectations

As each generation approaches the traditionally higher health care cost years, they also tend to have higher expectations for mobility and health than those of previous generations. These expectations are driven by several factors including new technologies that enhance the list of treatment options; higher income levels, which generally tend to raise expectations about living standards; and private-sector marketing efforts aimed at the rising seniors population.

If historical trends continue, the underlying health of Ontario's population will tend to improve with each generation. On the surface, this would suggest some moderation in the utilization of health care services. However, pressures are expected to persist as expectations for improved health outcomes continue to rise.

Information Management and Communications Systems

The adoption of information management and communications systems has the potential to create a more efficient supply of health services. Information technology can increase the efficiency of Ontario's health care system by revolutionizing the way health information is collected, stored, shared, accessed and used.

Potential for efficiencies

Applications of information technology such as electronic health records (EHRs) and telemedicine also have the potential to increase the effectiveness of Ontario's health-care system by improving access, productivity and quality. New information technologies can be used as a tool for improved system management and patient access. Another factor that could promote efficiencies in the supply of health services is the adoption of integrated supply chain management in the health care sector and cost-effective movement of information.

Implementation costs a factor

The adoption of health information management and communications systems may save costs by improving the efficiency and responsiveness of Ontario's health care system. However, because of the substantial and potentially unforeseen implementation costs, a cost-benefit analysis is essential when adopting new technologies. This needs to be done on a case-by-case basis, particularly since the benefits of adoption of new technologies, which are sometimes difficult to assess in the early stages, may depend on various factors such as patient volumes, geographic considerations and implementation strategies.

CONCLUSION

In the base case of this report, provincial health care costs are projected to rise, on average, by six per cent per year from 2009-10 to 2024-25. The analysis shows that demographics and utilization together are expected to account for about 60 per cent (i.e., 3.7 percentage points) of the projected six per cent average annual increase.

The relative contribution of population growth to health care costs over the projection period is projected to decrease, while that of population aging will increase as more of the population enters relatively high-cost health care years.

There is more potential for fiscal volatility from the utilization component. Factors such as new medical technologies and lifestyle changes play a complex role in health care spending. As a result, while the projected annual growth rate of utilization of 1.5 per cent is an estimate based on historical trends, its unpredictability means that utilization is associated with a high degree of risk, especially for a relatively long 20-year period.

Given the changeability of the utilization rate and the sensitivity of the Province's fiscal position to the utilization rate used, it is important to examine alternative health care cost scenarios based on higher or lower utilization growth than used in the base-case projections. The fiscal impacts of alternative assumptions about health care utilization are explored further in Chapter 6.

5 INTERGOVERNMENTAL FINANCES

INTRODUCTION

This chapter will examine the current state and projected trends of intergovernmental finances. Specifically, the current framework for both federal-provincial and provincial-municipal intergovernmental finance in key areas such as taxes, transfers, revenues and expenditures is examined. This chapter then reviews the existing and future roles of the federal government and of municipalities in Ontario.

Ontario's fiscal interaction with the federal government will have a significant bearing on the evolution of the province's economic and fiscal position in the long term. Over 16 per cent of Ontario's revenue comes from the federal government in the form of cash transfers. This chapter details how the base-case projection will affect key issues in 20 years.

Strong municipalities are essential to the fiscal health and future economic prospects of the province. As their interactions with the Province evolve, municipalities will continue to play a key role in supporting key areas such as infrastructure renewal, social programs and local economic initiatives.

As with elsewhere in this report, the base-case projections in this chapter assume that the current framework for government spending and revenues will remain the same.

SECTION I: FEDERAL-PROVINCIAL FISCAL OUTLOOK

Canada is a federal state with a national government and sub-national provinces and territories. Provincial and federal governments both occupy four major tax bases: personal income, corporate income, payroll and sales taxes. The federal government also collects revenue from customs and excise duties, and the provinces collect revenue from natural resource bases. In 2005-06, income taxes, payroll taxes and sales taxes are expected to make up almost 90 per cent of federal revenues and 75 per cent of Ontario's own-source revenues.

Federal government provides support

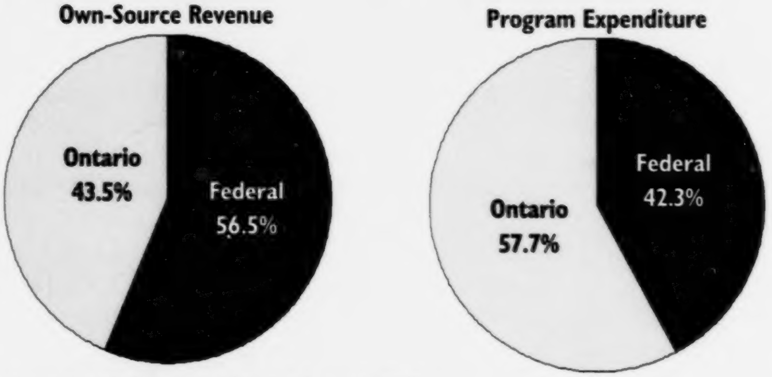
Provinces have most of the constitutional authority for social programs, while the federal government uses its spending power to provide financial support to provinces through transfer payments and to make direct transfers to individuals through programs such as Employment Insurance. For Ontario, the key mechanisms for providing federal support are the Canada Health Transfer (CHT) and Canada Social Transfer (CST) — two block transfers for health and social programs.

Section 36 of the Canadian Constitution requires the federal government to provide an Equalization program, the goal of which is to afford provinces with less lucrative tax bases with sufficient revenues to provide reasonably comparable public services at reasonably comparable levels of taxation. There are also numerous smaller federal transfers to support specific provincial programs.

Federal and Ontario Revenue and Expenses

The federal government collects the largest share of Canada's fastest-growing revenue fields, including personal and corporate income taxes. It collects two-thirds of the personal income tax in Ontario and nearly two-thirds of the province's corporate taxes. All told, the federal government collects 56.5 per cent of federal-provincial taxes in Ontario (all figures exclude municipal taxation and expenditure).[1]

Federal and Provincial Own-Source Revenues and Program Expenditures in Ontario, 2002



Sources: Statistics Canada: *Provincial Economic Accounts*, April 2005.

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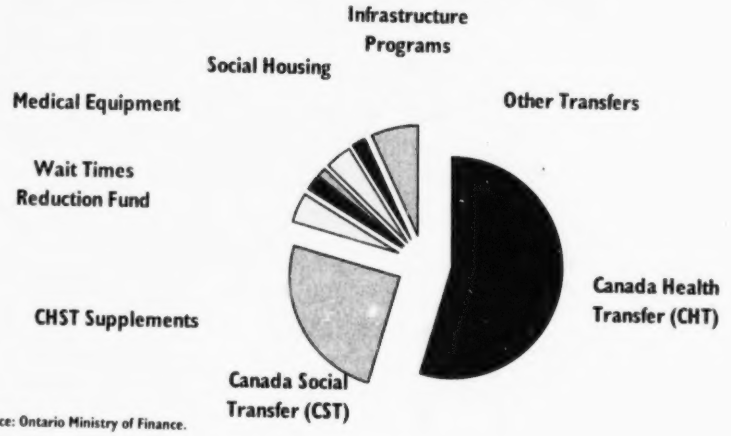
[1] *Provincial Economic Accounts*, Statistics Canada, April 2005.

Ontario has greater share of program expenditure

While the Government of Ontario collects 43.5 per cent of the federal and provincial taxes raised in Ontario, it accounts for a greater share of program expenditure in the province than does the federal government. Ontario's expenditures represent 57.7 per cent of program spending. The current allocation of tax revenues between federal and provincial governments requires that the federal government make fiscal transfers to all provincial and territorial governments, including Ontario.

Federal Transfers to Ontario, 2005-06



Source: Ontario Ministry of Finance.

Federal transfers support expenditures

Federal transfers to Ontario of more than $13 billion in 2005-06 will be used to support provincial expenditures. The CHT is the primary transfer used by the federal government to support provincial health spending, and Ontario will receive $7 billion through the CHT in 2005-06. The federal government also transfers $1 billion of targeted or time-limited funding for specific health care needs, such as reducing wait times, the purchase of medical equipment, and public health and immunization.

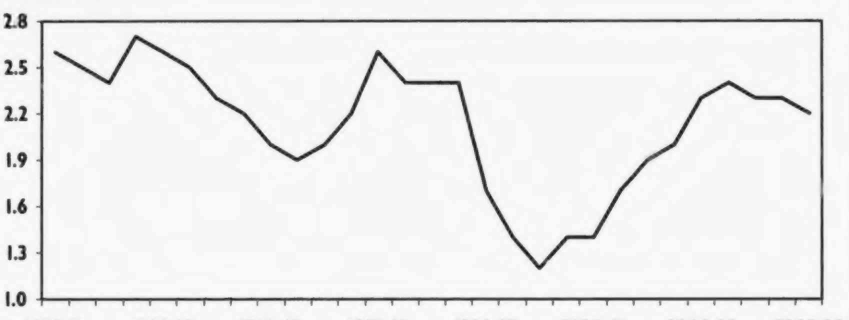
The federal government also supports provincial expenditures on postsecondary education and social programs through the CST, and Ontario will receive more than $3.3 billion in 2005-06. Other federal transfers will bring Ontario about $1.7 billion in revenue in 2005-06.

Equalization payments are made

The federal government also makes Equalization payments and Territorial Formula Financing (TFF) payments to ensure all provinces and territories can provide reasonably comparable levels of public services at reasonably comparable levels of taxation. Territories will receive $2 billion in TFF payments in 2005-06 and eight of the other provinces will receive $10.9 billion in Equalization payments in 2005-06. While Ontarians' contributions to federal taxes help support the Equalization program, Ontario has never been a recipient of Equalization payments.

In recent years, federal transfers as a share of Ontario's gross domestic product (GDP) have fluctuated from a high of 2.6 per cent in 1992-93 to 1.2 per cent in 1998-99.

Federal Transfers to Ontario as a Percentage of Ontario's GDP



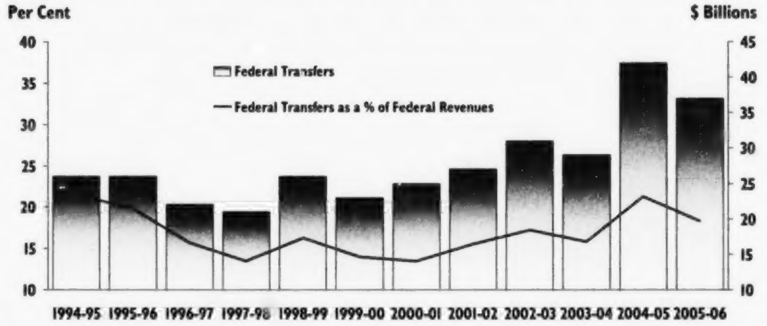
Source: Ontario Ministry of Finance.

At the national level, federal transfers to all provinces and territories, as a per cent of national GDP, have remained well below their 1994-95 level of 3.4 per cent and far below their 1984-85 level of 4.1 per cent. For the past decade, these transfers, as a per cent of GDP, averaged 2.6 per cent.[2]

26 per cent of federal revenues to transfers

The federal government allocated 26.2 per cent of its budgetary revenues to transfers to provinces and territories in 1984-85 and 21.5 per cent in 1994-95, but in spite of the recent increase in federal transfers, the provinces' share of federal revenues is forecast to be 18.3 per cent of the total in 2005-06.[3] If federal transfers to the provinces were the same proportion of total federal revenues in 2005-06 as in 1984-85, the national level of transfers to the provinces would need to increase by $13 billion. Similarly, if federal transfers in 2005-06 were the same proportion of total federal revenues in 1994-95, they would need to increase by $3 billion nationally.

Share of Federal Revenues Allocated to Transfers



Note: 2004-05 includes $2.8 billion for the Atlantic Offshore Accords, one-time funding for CHST supplements, medical equipment funds and five years of wait times reduction. 2005-06 is based on the 2005 Federal Budget, but reflects the federal government's decision to include the entire $2.8 billion for the Atlantic Offshore Accords in 2004-05.

Source: Federal Department of Finance.

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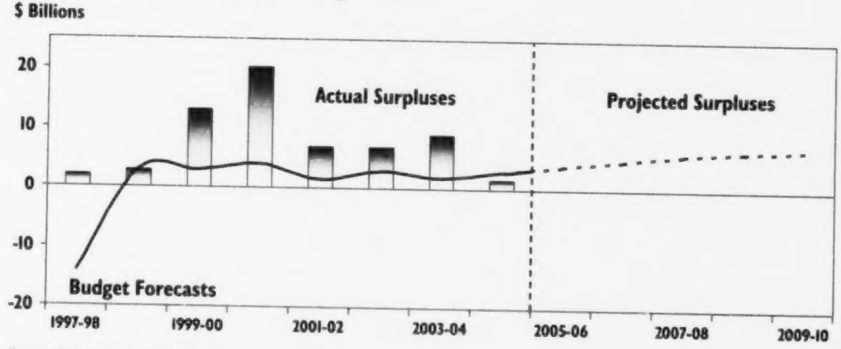
[2] Finance Canada, Federal and Provincial/Territorial Public Accounts, July 2005.

[3] Federal Department of Finance.

Federal-Provincial Fiscal Outlook

Federal surpluses continue

By its own estimates, the federal government is projected to continue in a surplus position at least until 2009-10. Many forecasters expect this trend to continue beyond 2009-10. For example, a 2004 report by the Conference Board of Canada, which was commissioned by the federal government, projected a federal surplus of over $31 billion by 2014-15.[4] It is reasonable to expect this trend will continue, assuming fiscal policy conditions remain the same. This will afford the federal government sufficient revenue to continue to pay down its debt.



The Federal Government Will Continue to Run Surpluses

Source: Federal Department of Finance.

Debt-to-GDP down

The federal government has also set an objective of reducing its debt-to-GDP ratio to 25 per cent by 2013-14. Under an alternate set of assumptions, it would take only one year longer to reach the federal government's 25 per cent debt-to-GDP target[5] if the government ran balanced budgets every year, rather than adhering to its current practice of earmarking $3 billion per year to debt reduction. By 2024-25, the federal debt-to-GDP ratio is projected to decline to 13 per cent if the contingency fund is used for debt repayment, or to 15 per cent if the federal government merely balances its budget every year.

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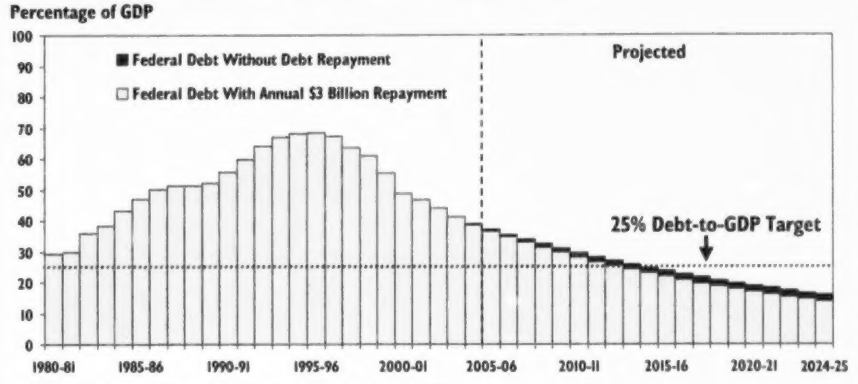
[4] "Fiscal Prospects for the Federal and Provincial/Territorial Governments," Conference Board of Canada, August 2004.

[5] Government of Canada, *2004 Federal Budget*, page 55.



Projected Federal Debt-to-GDP Ratio

Sources: Federal Department of Finance and Ontario Ministry of Finance.

Long-Term Projection of Federal Transfers

Transfers projected to change

This section uses the report's base-case projection of total federal funding for Ontario to estimate the future federal contribution, through transfers, to provincial expenditures in the areas of health, postsecondary education and social services. The projection, used to estimate federal transfers until 2024-25, was based on a number of key assumptions. The CHT is guaranteed by federal legislation to increase by six per cent per year until 2013-14.[6] After that, the base case assumes CHT grows with population and inflation until 2024-25. CST cash levels are legislated until 2007-08 and were set out on a planning basis to 2010-11 in the 2005 federal budget.[7] The base case grows CST at 3.3 per cent until 2013-14, and then by population growth and inflation until 2024-25. Transfers for all other programs are anticipated to remain constant.

Expenditures in areas of provincial jurisdiction, especially health care, education and infrastructure needs, are projected to grow substantially over the next 20 years. Federal transfers represent 16.1 per cent of the Ontario government's total revenues in 2005-06. In a status-quo policy environment, federal transfers are projected to drop to 13.5 per cent of revenues by 2024-25, using the base-case assumptions. Similarly, federal transfers for health, postsecondary education and social programs will not grow as quickly as the provincial expenditures they support. As a result, the federal contribution to Ontario's health, postsecondary education and social program spending is projected to decrease from 24.1 per cent in 2005-06 to 17.8 per cent in 2024-25.

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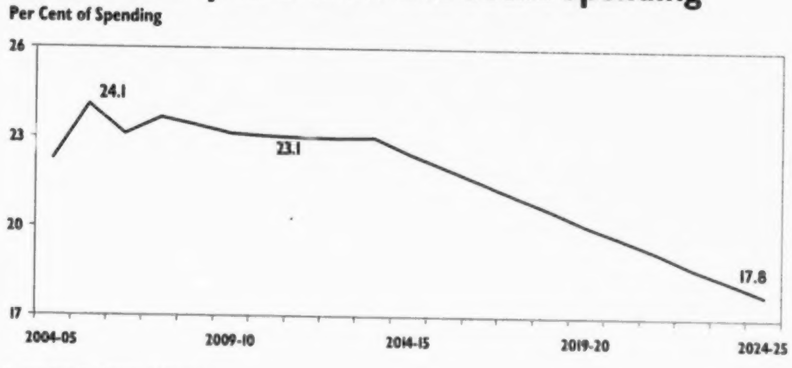
[6] "A 10-Year Plan to Strengthen Health Care," Communique from September 2004 First Ministers' Meeting on Health Care.

[7] Government of Canada, *2005 Federal Budget*, page 72.

Projected Federal Contribution to Ontario's Health, Postsecondary Education and Social Spending



Source: Ontario Ministry of Finance.

SECTION II: PROVINCIAL-MUNICIPAL FISCAL INTERACTION

Municipalities have an important role

Municipalities have been assuming an increasingly visible role in Canadian intergovernmental fiscal interactions. Municipalities are governed by the *Municipal Act, 2001* and other provincial statutes. Each municipality has powers and duties to provide services, manage and preserve public assets, foster the current and future well-being of the municipality, and deliver and participate in provincial programs and initiatives.

Property tax is the largest single source of revenue for municipalities. The Province establishes the policies governing assessment and property taxation and exercises this jurisdiction through a number of statutes and related regulations including the *Assessment Act; Education Act; Municipal Act, 2001;* and *Municipal Property Assessment Corporation Act, 1997.*

The municipal portion of the property tax is established by each municipality to support municipally provided services. The education portion of the tax is established by the Province to support the education system. This portion contributes approximately $6 billion to education annually.

Provincial-Municipal Revenues and Expenses

Ontario transfers funds to most municipalities

The fiscal interaction between Ontario and its 445 municipalities involves direct provincial transfers, a range of investments and program expenditures, along with legislative oversight of the municipal fiscal system including budgetary and audit rules, borrowing, investment and the property tax system.

Ontario municipalities are required to balance their operating budgets. As a result, the use of debt by municipalities is limited to financing capital expenditures. Overall, the fiscal strengths of Ontario municipalities include generally low debt levels; moderate levels of reserves and reserve funds; and strong growth in the population and tax assessment base. However, it is important to note that the financial situation of municipalities across Ontario varies depending on a number of factors, including location and size.

Municipal Revenues

Municipal operating revenues are primarily composed of property taxes, grants, user fees and service charges. While each municipality's revenue base varies, property tax and payments in lieu of taxes represent approximately half of Ontario municipal operating revenues.

OMPF main transfer program

The Ontario Municipal Partnership Fund (OMPF) replaced the Community Reinvestment Fund as the Province's main transfer program for funding municipalities. In 2005, eligible municipalities will receive $656 million from OMPF.

Municipalities receive a share of provincial gas tax revenues — two cents per litre by 2006 — which is dedicated to increasing transit ridership, improving transit service, and expanding transit routes. Over the 2005-10 period, the total gas tax allocation across the province will exceed $1 billion. To support economic development, agriculture, employment, highway rehabilitation, and community development, the Province also dedicates other regular program spending to municipalities.

In addition to the major transfer programs, the Ontario Strategic Infrastructure Financing Authority (OSIFA) provides municipalities, along with universities and other broader public-sector partners, with access to low-cost and longer-term loans to build and renew critical public infrastructure.

Municipal Expenditures

Increases in municipal expenditures have been shown to have kept pace with standard economic indicators between 1988 and 2001.[8]

Ontario Municipal Expenditures

Components	Expenditures	
	1988	2001
Per-capita municipal spending	$1,181	$1,951
Municipal spending as a per cent of gross domestic product (GDP)	4.6 per cent	5.3 per cent
Municipal expenditures as a per cent of total provincial/municipal spending	20.1 per cent	23.5 per cent

Source: Statistics Canada: Financial Management Systems (FMS).

Expenditures have kept pace

The chart above illustrates the municipal sector's spending in 1988 and 2001. Per-capita expenditures represent one measure of the level of municipal spending. Expenditures as a per cent of gross domestic product (GDP) reflect the relative importance of the sector in overall economic activity of the province. Some of the increase in municipal expenditures as a percentage of total provincial-municipal spending may be a result of local service realignment in the 1990s.[9] Since that time, Provincial spending has increased, which will affect the trend from 2001 onward.

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[8] Melville McMillan, "Municipal Relations with the Federal and Provincial Governments: A Fiscal Perspective," Department of Economics, University of Alberta, May 2003.

The Evolving Role of Ontario Municipalities

Over the next decade and beyond, municipalities are anticipated to have a greater role in shaping the Ontario economy. Municipalities influence economic growth through their own spending, by delivering local economic initiatives, supporting social programs and maintaining a high percentage of Ontario's public infrastructure.

Pressure to invest in infrastructure

There will be ongoing pressure on municipalities to invest in infrastructure, particularly in the areas of water, sewers and transportation. It is estimated that, province-wide, an investment of $34 billion is needed in water and sewer infrastructure alone.[10] Transportation infrastructure is important to Ontario's exports, since 75 per cent of all goods exported to the United States are moved on Ontario's local roads network.[11]

The impending shift to an aging population is anticipated to also place an additional burden on social service and public health programs that are delivered at the local level. These spending pressures will not be experienced the same way by all municipalities, and the impact of rising costs will vary depending on the size and structure of the community.

Municipalities need to attract business and skilled labour

To remain competitive in the future, Ontario municipalities must continue to attract business and skilled labour. Municipalities will continue to have a role supporting transportation and communications infrastructure, as well as delivering services that enhance the quality of life, the livability of communities and the development of long-term human capital.

CONCLUSION

Assuming there is no change in current policy, federal transfers will increase in nominal terms, but their share of provincial revenues and program spending, especially in key areas such as health and social programs, is projected to diminish throughout the forecast period of this report. Municipalities are anticipated to have a greater role in shaping the economy in the future. It is important to ensure that provincial and municipal governments have revenue capacity commensurate with their expenditure responsibilities.

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[9] Harry Kitchen, "Financing Canadian Cities in the Future?" Department of Economics, Trent University, May 2004.

[10] "Watertight: The Case for Change in Ontario's Water and Wastewater Sector," Report of the Water Strategy Expert Panel.

[11] "Ontario's Municipal Roads 2001," Ontario Roads Coalition.

6 ONTARIO'S LONG-TERM FISCAL PROSPECTS

INTRODUCTION

Potential future spending explored

This chapter uses the demographic and economic growth assumptions developed in previous chapters to estimate possible future paths for government spending and revenue. It presents projections showing a range of potential fiscal scenarios for the Ontario fiscal situation under alternative sets of assumptions about the economy, revenues and cost drivers. These are described as the base case, and high and low economic growth scenarios.

The budget balance shown is illustrative of the net effect of these assumptions. Future electorates and their governments that must deal with these situations may make decisions about spending and taxation that could lead to quite different fiscal outcomes. It is acknowledged as unrealistic to assume that policy affecting revenues and spending will not change in the next 20 years.

The starting point for these projections in all cases is the fiscal plan published in the 2005 Ontario Budget. Up to 2008-09, the numbers from the fiscal plan were used. Beyond that year, a model framework was used, based on assumptions about demographics, inflation and utilization (meaning changes in the real per-capita value of government spending).

On course for surpluses

The tentative conclusion is that, having balanced the budget in 2008-09, the Ontario Government would be on course for a series of modest surpluses in the following decade.

In the long term, after 2018, there is the potential to return to a deficit position, largely due to revenue growing more slowly than health care spending. The rate of productivity growth in the economy is a vital factor in determining the fiscal balance.

This chapter also explores alternative scenarios of the fiscal path and shows the impacts of different assumptions about economic growth, health spending or federal transfers. In most of the alternative scenarios, the province's debt-to-GDP ratio would be on a downward trend, leading to a decline in the share of debt interest in total spending.

Even with sustained fiscal discipline and healthy economic growth, the fiscal balance is projected to rise to no more than very small surpluses and is projected to go back into deficit late in the next decade. This highlights the constrained fiscal circumstances of the Ontario Government given its responsibility for health care, which is likely to grow considerably more rapidly than the gross domestic product (GDP) and revenue base.

Projections based on assumptions

It should be emphasized again that the numbers in this chapter are neither plans nor forecasts of Ontario's fiscal outlook. They are projections of what might occur based on various sets of assumptions.

SECTION I: BASE-CASE FISCAL PROJECTIONS

This section details the revenue and spending assumptions behind the projections as well as the fiscal balance and debt results described in five-year periods.

Revenue Projections

The revenue projections are based on the assumption that future tax rates and rules will remain the same as the ones that are currently in effect or announced; that is, the status quo will remain. There are a number of long-term uncertainties about how events such as the aging population and changing technology may affect the revenue yield relative to income. However, it is acknowledged as unrealistic that policy affecting revenues and expenses will not change in the next 20 years. The base case is not meant to suggest that policy will not change, but that long-term projections do not prejudge government policy.

Slower growth of tax revenues

Ontario tax revenues would grow at a rate somewhat slower than the economy (given the assumption of a constant tax structure). This results from a portion of the tax base not increasing with income or inflation as well as changes in the composition of spending and income.

The value of taxes generated by economic activity is very likely to change over time. Appendix 6A examines how demographics, changes in the composition of spending, sources of income or effects of globalization could have an impact on tax revenues.

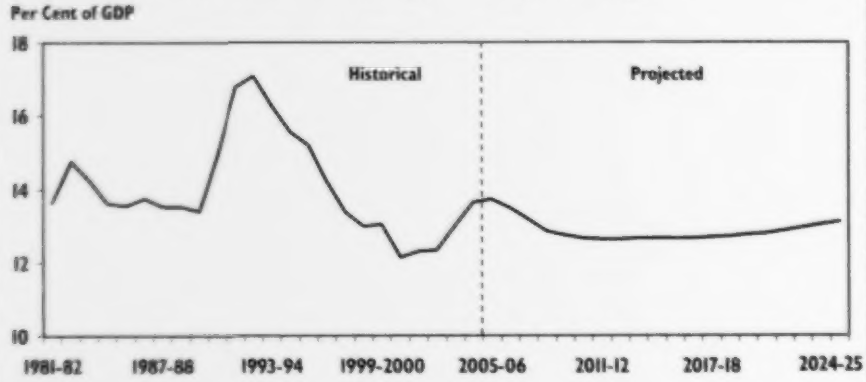
Federal transfers to Ontario currently constitute about 16 per cent of Ontario revenue. The base-case projection assumes that federal transfer arrangements currently announced through to 2013-14 will remain in effect, and that transfers will increase at the rate of population growth plus inflation from then on. Alternative assumptions about federal transfers will be considered in Section IV.

Government Spending Projections

Spending projections key drivers

The spending projections were based on calculations of the impact of changing demographics, inflation and assumptions about changes in the intensity of use of government services. In the case of education and health spending, the age structure of the population was taken into account by weighting expenditures to trends in costs by age group. Elementary and secondary education spending is related to the number of young people in the population, while health spending rises per capita as people age.

Ontario Government Program Spending



Source: Ontario Ministry of Finance.

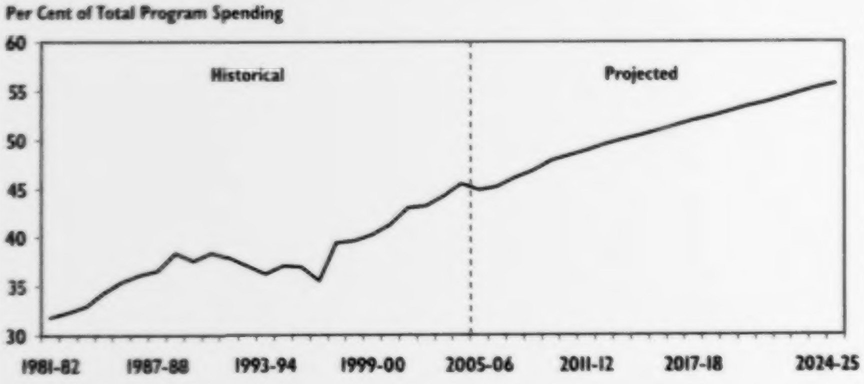
In projecting health care spending, the combined effects of population growth and aging led to an assumption of an average 2.2 per cent annual increase. Price inflation is assumed to average 2.2 per cent per year. In addition, a 1.5 per cent annual increase in the utilization rate for health care spending is assumed, reflecting past experience. A look at growth over the 1980-2000 period suggests that utilization was responsible for a 1.4 per cent average annual increase in health care spending in Ontario. Most other studies that project health spending also assume an annual increase in the utilization rate of one to two per cent.

Health spending projected to rise six per cent annually

Taking the sum of these factors, health expenses are assumed to rise 6.0 per cent per year on average from 2009-10 to 2024-25. The growth rate is assumed to gradually increase to a level somewhat higher than this average after 2019, as the proportion of elderly people in the population rises.

Based on these assumptions, the share of health spending in total program spending would climb from 45 per cent in 2004-05 to about 55 per cent in 2024-25, a continuation of the trend since 1981.

Health Spending by Ontario Government



Source: Ontario Ministry of Finance.

Education and training spending is assumed to grow according to a rate that reflects each school-age cohort's share of total education spending. It also includes a one per cent annual increase in the utilization rate for education spending, and inflation of 2.2 per cent per year. An example of the increase in the utilization rate is the trend to an increasing share of the population attending postsecondary institutions, including older age groups who are engaged in lifelong learning. In the base case, provincial government spending on elementary, secondary and postsecondary education is projected to rise 3.4 per cent on average annually over the 2009-10 to 2024-25 projection period.

General government program spending, other than health, education and social services, is assumed to grow at the rate of overall population growth, plus inflation. It also includes a utilization rate increase of one per cent annually, allowing for ongoing increases in real per-capita spending.

Projections of the Government Balance and Debt

These assumptions underlie a model in which the demand for real growth in government spending is dependent mainly on demographic factors and trends in utilization rates.

Revenue growth determined by economic growth

Government tax revenue growth, by contrast, is determined by economic growth and therefore is quite sensitive to assumptions about productivity growth. As a result, significant differences in fiscal outcomes can occur over the long term due to relatively small differences in annual productivity growth rates.

The projections for government balance and debt are set out in the following section. They are set out in five-year periods from 2005-06 to 2024-25. More details on the projections are provided in Appendix 6B.

Stages in the Fiscal Projections for Ontario to 2024-25

2005-06 to 2009-10

Starting point is 2005 Ontario Budget

The starting point for these projections in all cases is the fiscal plan to 2008-09 set out in the 2005 Ontario Budget.

- Total revenue is projected to grow at an average annual rate of 4.6 per cent over the 2005-06 to 2009-10 period, while annual growth in total spending is projected to average 3.5 per cent over this period.

A key part of the strategy to eliminate the deficit is to contain growth in total program spending to a level below that of taxation revenue.

In this period, increased spending on priorities in health, education and social services is projected to be offset by restraint in other program spending. This helps turn a deficit of $1.6 billion in 2004-05 to a surplus of $1.4 billion by 2009-10.

- Spending on health is projected to grow on average by 5.1 per cent annually during the 2005-06 to 2009-10 period. Spending on education is projected to grow on average by four per cent annually and spending on social services by 3.4 per cent annually.

2010-11 to 2014-15

Revenue and spending growth similar

Revenues and expenses are projected to grow at a similar pace over the 2010-11 to 2014-15 period.

- Total revenues are expected to grow by 4.1 per cent annually, taxation revenue by 4 per cent annually, and federal transfers to Ontario by 4.2 per cent annually, reflecting existing commitments by the federal government through 2013-14. After that year, federal transfers are assumed to grow at the same rate as inflation and population growth.
- Total budgetary expenses are projected to grow by just over four per cent annually, in line with total revenues. The result is modest fiscal surpluses during this period.
- Health spending is projected to rise by 5.8 per cent annually over the 2010-11 to 2014-15 period.
- A series of modest surpluses would reduce net Provincial debt to about 17 per cent of GDP and lead to slightly lower spending on interest on debt during this period.

2015-16 to 2019-20

Potential deficit if no action taken

In this period, it is expected that moderate economic growth and an aging population will combine to cause spending growth to outpace revenue growth. This tips the balance, and, in the absence of policy changes, leads to a small deficit by 2019-20.

- During this period, health spending is projected to grow at about a rate of 6.0 per cent, while education spending rises to 3.5 per cent. By 2019-20, health spending is projected to account for about 53 per cent of total program spending.
- This would push total projected program spending growth up to an average of 5.0 per cent per year, faster than the predicted 4.3 per cent annual growth in total revenue.
- Interest on debt payments is projected to continue to fall as Ontario records fiscal surpluses, albeit shrinking ones, during all but the last year of this period.

2020-21 to 2024-25

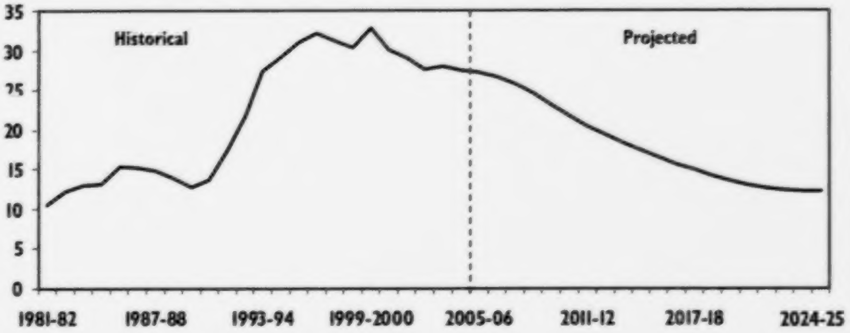
Spending pressures led by health care

During the 2020-21 to 2024-25 period, stronger increases in total spending outstrip steady revenue growth, and the projected Provincial deficit, based on the assumption of no policy changes, becomes larger.

- Total revenues are projected to grow by an average of 4.3 per cent per year while total spending rises by five per cent annually.
- Spending pressures are driven largely by a 6.2 per cent annual increase in health spending due to the growing share of seniors in the population. Health spending is projected to represent about 55 per cent of total program spending by 2024-25.
- The deficit is projected to remain small enough that the debt-to-GDP ratio continues to fall. By the end of the projection period, Provincial net debt represents about 12 per cent of GDP.

Ontario Projected Debt Ratio

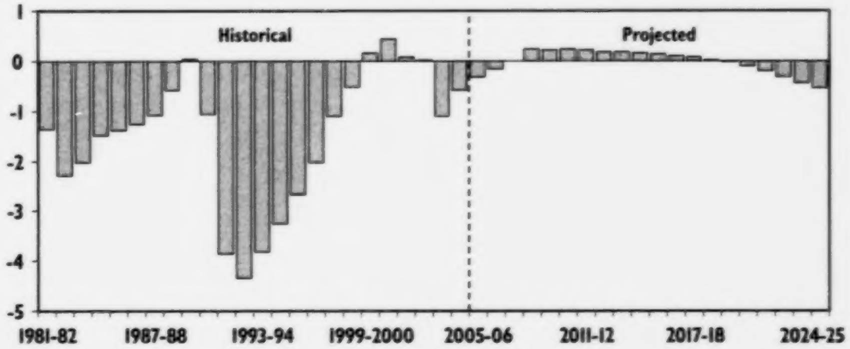
Debt as a Percentage of GDP



Source: Ontario Ministry of Finance.

Ontario Projected Fiscal Balance

Balance as a Percentage of GDP



Source: Ontario Ministry of Finance.

Debt-to-GDP ratio continues to fall

The deficits remain relatively small in this base-case projection, reaching 0.5 per cent of GDP in 2024-25. However, it should be noted that this could be the beginning of a structural deficit for the period beyond 2025, when the share of seniors in the population surpasses 20 per cent and puts much greater demands on the health care system.

The base case assumes productivity growth slightly higher than experienced over the past two decades. At the same time, the spending assumptions represent relatively modest growth in government spending by historical standards. Even with sustained fiscal discipline and healthy economic growth, the fiscal balance is not projected to rise to more than very small surpluses and to go back into deficit late in the next decade. This highlights the constrained fiscal circumstances of the Ontario Government, given its responsibility for health care, which is likely to grow considerably more rapidly than GDP and the revenue base.

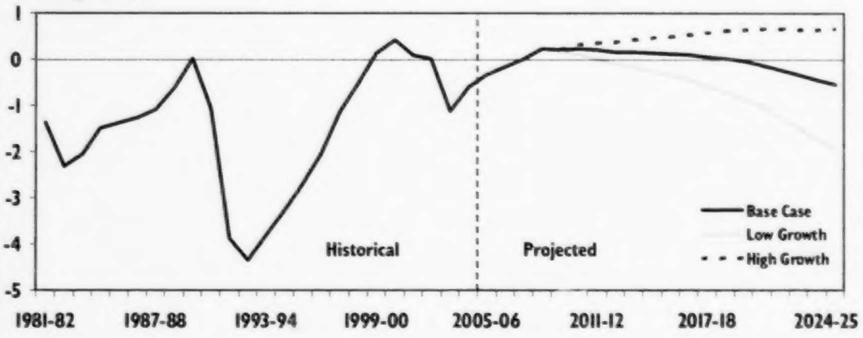
There are a number of uncertainty factors in the fiscal outlook, with the most important being productivity, health care spending growth and federal transfers. The next sections will examine the potential fiscal impacts of alternative assumptions concerning those factors.

SECTION II: FISCAL IMPACTS OF ALTERNATIVE SCENARIOS OF ECONOMIC GROWTH

Outcome sensitive to small differences in productivity growth

This section examines the fiscal impact of the high and low growth economic scenarios presented in Chapter 2. The fiscal outcome is sensitive to small differences in the assumptions for economic growth. In these scenarios, productivity growth is about 0.3 per cent per year higher or lower than in the base-case economic projection for the 2009-10 to 2024-25 period.

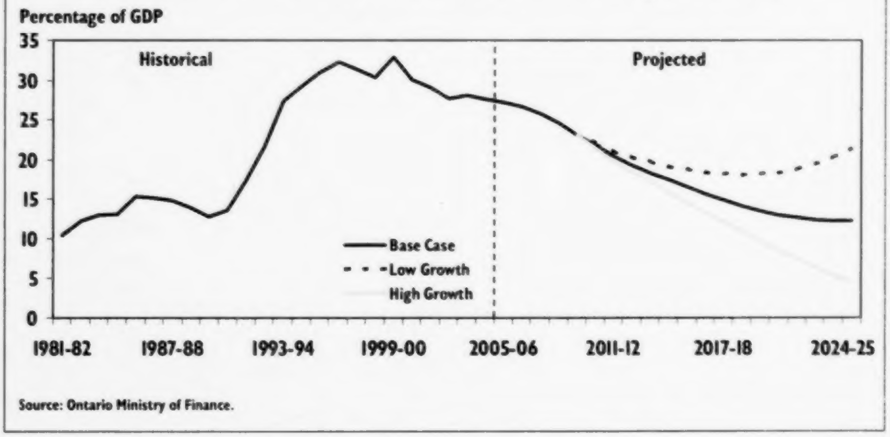
Ontario Budget Deficit or Surplus as Percentage of GDP



Source: Ontario Ministry of Finance.

The benefits of a sound fiscal policy are most evident in the declining interest on debt payments as a share of government revenue. In all three scenarios, interest on debt is projected to decline from where it is today, but in the low growth scenario, it starts to turn back up again towards the end of the projection.

Ontario Government Debt as Percentage of GDP



Source: Ontario Ministry of Finance.

In the high growth scenario, the Ontario Government could achieve permanent surpluses. In this projection, the surplus in each year is assumed to be devoted to debt reduction, leading to a sizable reduction in the debt-to-GDP ratio. Again, it should be emphasized that this is not a prediction of what would happen with stronger economic growth. With permanent surpluses, future electorates and their governments would have the option of using a portion of this fiscal dividend for other purposes than debt reduction.

In the low growth scenario, the converse occurs, with a rapid return to larger deficits. In this scenario, the debt-to-GDP ratio reverses its downward trend.

Again, this is not meant to indicate the fiscal outcome that would occur with weaker growth, but to emphasize that it would result in serious fiscal pressures, which would have to be managed through changes in government policy.

Neither the base case nor the alternative economic scenarios model possible catastrophic events, such as a pandemic or terrorist attack. Predicting when such events might occur or their economic and fiscal impact is subject to a high degree of uncertainty.

POTENTIAL CRISES: RISKS AND IMPACTS

The scenarios described in the long-term report provide a path for economic growth and the government's fiscal position over the next 20 years. These projections do not attempt to predict year-to-year fluctuations in economic activity. Similarly, the projections cannot attempt to include the impact of major crises that are, by their nature, unpredictable based on current knowledge. Nonetheless, these events or trends represent risks, that if they were to occur, would undoubtedly affect Ontario's economic and fiscal development.

The potential for crises of this type makes it important for the government and the economy to be flexible and adaptable, so that they can respond quickly and effectively, minimizing the impacts of such crises.

These crises include:

- **More volatile and extreme weather conditions due to climate change**
  There is growing evidence that environmental changes caused by elevated atmospheric carbon dioxide and its potential effects on global climate will alter ecosystems. Increased carbon dioxide may increase average summer temperatures in Ontario and increase the frequency and severity of droughts. In addition, the incidence of extreme weather events and variations in weather are expected to increase.
- **A major medical emergency such as a flu pandemic**
  According to the World Health Organization (WHO), a flu pandemic tends to occur every 20 to 30 years. As of 2005, it has been 37 years since the last pandemic (the Hong Kong flu of 1968) and WHO is raising concerns that the avian flu virus H5N1 is developing in ways that could trigger the next pandemic, killing two million to seven million people worldwide and infecting billions more.
- **Dramatic and enduring shortages of major commodities such as energy**
  Surging world demand and slowing growth in the supply of oil could combine to significantly increase the relative price of energy. This could dramatically affect the competitiveness and wealth of jurisdictions such as Ontario, which are net importers of energy products.
- **Increased international conflict and terrorist events**
  Any such events could result in increased international tensions, which in turn would lead to rising levels of international conflict and terrorism.

Some crises (such as financial panics) tend to have relatively a short-term impact, while others (such as major shifts in climate) could have an ongoing impact. Developing alternative scenarios for such large changes is beyond the scope of this report.

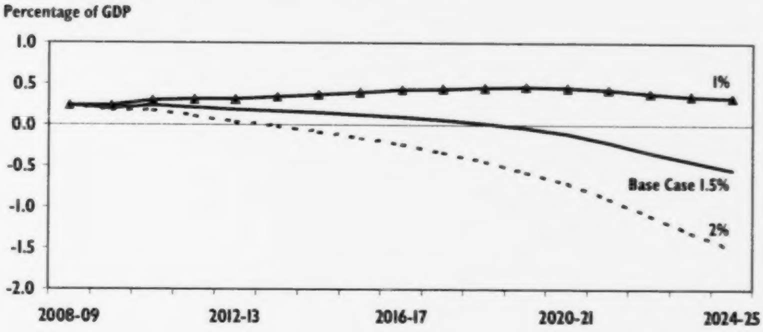
SECTION III: FISCAL IMPACTS OF ALTERNATIVE ASSUMPTIONS ABOUT HEALTH CARE SPENDING

The base-case scenario presented in Chapter 2 assumes that health care costs will, on average, rise by 6.0 per cent annually from 2009-10 to 2024-25.

Demographics, which include both population growth and population aging, are expected to account for over one-third of the projected annual growth in health care spending and utilization for about one quarter.

Utilization rate can have major impact

Demographic projections are associated with a relatively high degree of certainty, whereas changes in health care utilization are complex and unpredictable over extended periods.



Projected Ontario Government Balance Under Alternative Health Utilization Rate Scenarios

Source: Ontario Ministry of Finance.

Case A (assumes a lower one per cent utilization rate). This utilization rate assumption results in an overall average annual growth rate for health care spending of 5.5 per cent over the 2009-10 to 2024-25 period. There are a number of reasons for a future utilization rate to be one per cent. These would include:

- the introduction of medical technology and records management, generating substantial cost savings to the health system; and
- a strong moderating effect of healthier lifestyles on health care cost increases.

Case B (assumes a higher two per cent utilization rate). This utilization rate assumption results in an overall average annual growth rate for health care spending of 6.5 per cent over the projection period. There are a number of reasons why the future utilization rate might be two per cent. These would include:

- the introduction of costly new medical technologies, which result in a significant expansion of the range of health services provided, with parallel increases in their use; and
- a weak moderating effect of healthier lifestyles on health care cost increases.

The sensitivity analysis shows that changes in the utilization rate greatly affect health care spending and the Province's fiscal balance.

Decreasing the utilization annual growth rate by 0.5 of a percentage point (Case A), for example, would move the base-case projections of deficits reaching 0.5 per cent of GDP in 2024-25 (i.e., a deficit of $7.2 billion) to a series of annual budgetary surpluses reaching 0.3 per cent of GDP in 2024-25 (a surplus of $4.5 billion). In contrast, raising the utilization rate by 0.5 of a percentage point (Case B) would nearly triple the projected deficit to 1.5 per cent of GDP in 2024-25, raising the deficit for that year to nearly $20 billion.

SECTION IV: FISCAL IMPACTS OF ALTERNATIVE ASSUMPTIONS ABOUT FEDERAL TRANSFERS

Federal policy important

To test the strength of the assumptions about federal transfers made in the base-case scenario, the results of the projection were compared to the long-term historical average. If federal transfers grew at the same rate as they averaged over the past 20 years, federal transfers, both as a share of total revenues and total program spending in Ontario, would be very close to the base-case scenario results.

Assumptions of Alternative Scenarios

Two additional scenarios — constant growth and legislated growth — were projected to 2024-25 to identify alternative situations for federal-provincial fiscal transfers in the future.

The current federal legislation governing the CHT mandates that the federal government escalate the transfer by six per cent per annum until 2013-14. The constant growth scenario assumes that CHT funding would continue to grow by six per cent per annum until the end of the forecast period of this report.

Sensitivity Analysis: Assumptions Overview

Components	Assumptions	
	Constant Growth	Legislated Growth
CHT	Grows at 6 per cent to 2024-25	Grows at 6 per cent to 2013-14 Constant from 2014-15 to 2024-25
CST	Grows at 3.3 per cent to 2024-25	Grows at 3.3 per cent to 2010-11 Constant from 2011-12 to 2024-25
Other Transfers	Grows with GDP to 2024-25	As outlined in the 2005 Ontario Budget Constant from 2009-10 to 2024-25

Source: Ontario Ministry of Finance.

Constant growth: assumes transfers to grow at same rate

The current federal legislation governing the CST outlines growth in the transfer that averages to 3.3 per cent per annum until 2010-11. The constant growth scenario assumes that payments under the CST would continue to grow at their legislated rate of 3.3 per cent per annum until the end of the forecast period of this report. The constant growth scenario also assumes that transfers for all other programs would grow at the same rate as Canada's GDP, roughly in line with federal revenue increases.

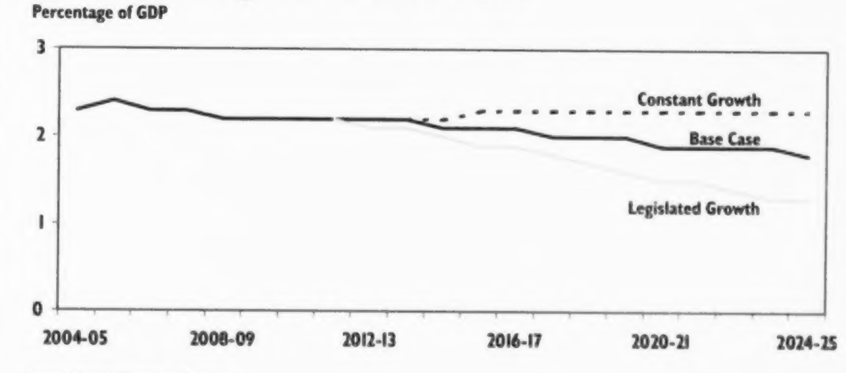
Legislated growth: means slowest growth

The intent of the legislated growth scenario is to predict the future of federal transfers if no increases in federal-provincial funding arrangements are made beyond the amounts currently outlined in the federal legislation governing health, postsecondary education and social transfers. As such, payments under the CHT were assumed to grow by six per cent per annum until 2013-14, as outlined in federal legislation, and then to remain constant thereafter. Similarly, payments under the CST were assumed to grow by 3.3 per cent until 2010-11, and then to remain constant thereafter. Transfers for all other programs were assumed to remain constant following the limit of Ontario's budgetary revenue forecasts in 2008-09.

Results of the Alternative Assumptions

The base-case estimates predict that federal transfers, as a share of Ontario's total revenues, will decrease from 16.1 per cent in 2005-06 to 13.5 per cent by 2024-25. Under the constant growth scenario, federal transfers would represent 16.8 per cent of total revenues in 2024-25. The legislated growth scenario projects that federal transfers, as a portion of total revenues, would decrease to 9.9 per cent.

Projected Federal Transfers to Ontario as a Percentage of Ontario's GDP



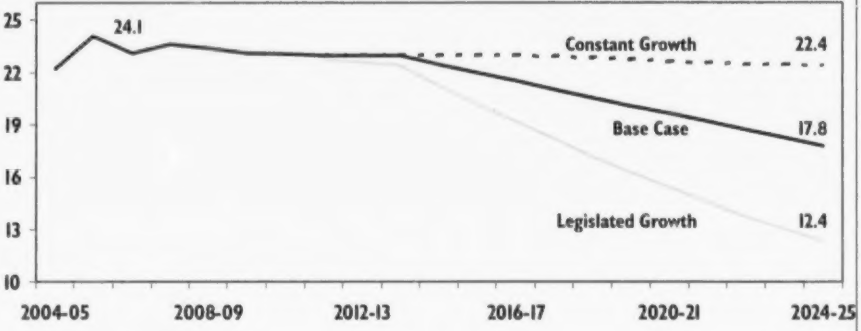
Source: Ontario Ministry of Finance.

Transfers projected to decrease as share of spending

Federal transfers for health, postsecondary education and social programs, regardless of the assumptions chosen, are projected to decrease from the current share of spending of 24.1 per cent. This reflects that, under any of the tested scenarios, federal transfers do not grow as quickly as the provincial programs they are intended to support. The constant growth scenario shows a decrease in transfers to 22.4 per cent of Ontario program spending. The legislated growth scenario depicts a significant decrease to 12.4 per cent of program spending.

Projected Federal Contribution to Ontario's Health, Postsecondary Education and Social Spending

Per Cent of Spending



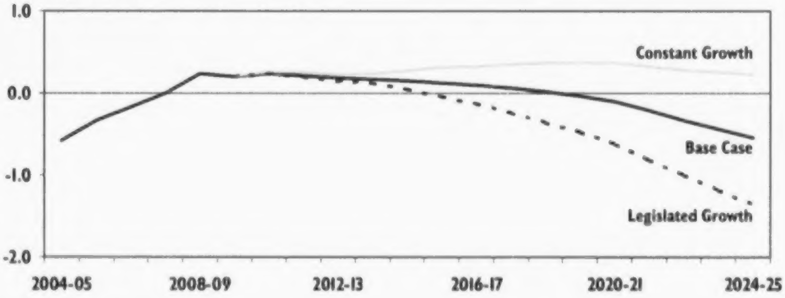
Source: Ontario Ministry of Finance.

The base-case projection assumes that federal transfers would increase at the rate of population growth plus inflation after 2013-14. Since federal transfers account for a substantial portion of Ontario's total revenues, the amount of future federal transfers affects the overall fiscal position of the Province, including its ability to balance the budget and repay debt. The various scenarios indicate that the length of time in which Ontario will achieve surpluses will vary considerably, which then affects the Province's ability to pay down debt and invest in new program spending.

Under the base-case scenario, Ontario faces a potential deficit of $7.2 billion in 2024-25. Depending on the federal fiscal arrangement scenario, the long-term fiscal outlook varies significantly from a deficit of approximately $18 billion under the legislated growth scenario to a surplus of $3 billion under the constant growth scenario.

Projected Ontario Government Balance Under Alternative Federal Transfers Scenarios

Percentage of GDP



Source: Ontario Ministry of Finance.

CONCLUSION

The projections in this chapter are based on a particular set of assumptions. They are neither a plan nor a forecast. However, the assumptions were chosen to be fairly representative of a median outlook for the Ontario economy and demands for government services.

Over time, projections show that an aging population and continued enrichment of health care combined with slowing economic growth would result in growing fiscal pressures. The revenue growth needed for a sustainable fiscal future depends on maintaining a steady rate of economic growth. This economic growth is only achievable through productivity growth.

The projections show that Ontario's revenue growth and spending growth are very finely balanced, and the balance sheet is likely to remain at risk of slipping back into deficit. Maintaining balanced budgets will require careful management.

However, Ontario is on a path towards a solid and sustainable fiscal future. Eliminating deficits, as laid out in the 2005 Ontario Budget, leads to lower spending on interest on debt and creates more room to pay for the services that people want most.

APPENDIX 6A: FORCES AFFECTING TAX REVENUE CAPACITY

Population aging, structural changes in the economy and globalization are likely to have an impact on several significant sources of government revenue. Over the next 20 years, governments expect to face progressively greater expenditure pressures combined with limitations on their flexibility to use the tax system to generate required revenues. This appendix considers the potential impact of demographic changes on personal income and retail sales tax revenue by isolating demographic changes from other factors that will likely affect revenue. The impacts considered do not include the effects of economic growth or inflation (although these effects are included elsewhere in this report). The potential impacts of other trends, such as the growing importance of e-commerce and globalization, are acknowledged but are not quantified even though they may affect revenues in the future.

Given the potential significance of the demographic and structural changes ahead, much more research can be expected on these issues in coming years. Many of the studies that have been conducted to date rely exclusively on a single revenue and expenditure profile by age in order to make projections. These studies seldom specify actual sources of revenue and expected expenditure pressures. See the box below for a brief list of some noteworthy studies to date. It is not surprising that no real consensus emerges from the listed studies since there is much that we do not and cannot know about conditions in 2025.

Studies of Population Aging and Government Revenues

- The 1997 U.S. Economic Report of the President suggested that population aging would lead to slow growth in the number of people working and paying taxes, accompanied by rapid growth in the cost of health and social security programs.[1]
- The 1998 report from representatives of the central banks and ministries of finance of the Group of Ten countries suggested that government finances will be adversely affected by the aging of the population. They suggested that the fiscal burden in some countries may become unsustainable due to rapidly increasing expenditures on health care and public retirement benefits combined with the erosion of payroll and income tax revenues due to aging of the population.[2]
- The 2002 Australian Intergenerational Report indicated that even though population aging would create downward pressure on total personal income tax revenue, other factors such as GDP growth, labour participation rates and wage rates make it difficult to ascertain the net effect on total personal income tax revenue.[3]
- The 2003 report by the U.S. Congressional Budget Office estimated that public expenditures on entitlement programs, especially Medicare, Medicaid and Social Security, will claim an increasing share of the nation's economic output over the coming decades. The report suggested that unless taxation reaches levels that are unprecedented in the United States, current spending policies will probably be financially unsustainable over the next 50 years.[4]
- The 2003 United Kingdom Long-Term Public Finance Report claimed that the aging of the population will have a very limited effect on public expenditures, while revenues are expected to remain fairly stable as a share of GDP over the 50-year period examined. It was suggested that tax-deferred pension contributions and employment rates among older age cohorts may have an upward effect on revenue.[5]

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[1] *Economic Report of the President*, Executive Office of the President and the Council of Economic Advisors, February 1997.

[2] *Group of Ten: The Macroeconomic and Financial Implications of Ageing Populations*, Bank for International Settlements, April 1998.

[3] *Intergenerational Report 2002-03*, Australia Office of the Treasurer, May 2002.

[4] *The Long-Term Budget Outlook*, The Congressional Budget Office, December 2003.

[5] *Long-Term Public Finance Report: Fiscal Sustainability with an Ageing Population*, HM Treasury, December 2003.

Impact of Demographic Changes on PIT Revenue

Over the next 20 years, projected slower growth in Ontario's labour force and the retirement of baby boomers are likely to affect the overall level of personal income tax (PIT) paid by people in Ontario. Other factors, such as gross domestic product (GDP) growth, growth in personal income and immigration, make it difficult to predict with any certainty what the net effect on total PIT revenue will be.

Although aging will have an impact on PIT revenue due to changing income composition and greater claims of age-related credits and higher medical expenses, there is reason to believe that the impact will be more modest than the demographic changes alone might otherwise imply. To some extent, potential revenue losses will be offset by reduced use of credits and deductions for work-related expenses, child care and education.

In order to estimate the impact of the anticipated demographic transition and population growth on PIT revenue, the demographic projections have been applied to current incomes and the current tax system. These projections suggest that Ontario's taxes paid per tax filer could possibly decline by up to 3 per cent, or around $600 million annually in 2005 dollars, by 2025, not taking into account the projected increase in per-capita income.

Impact of Demographic Changes on RST Revenue

An Industry Canada report (see the box below) indicated that the broad trend associated with population aging is the shift in consumption from durable goods and related services to specialty goods and services, particularly those related to travel, health and recreation. Thus, as individuals transition from work to retirement, their consumption patterns may evolve from the purchase of taxable goods to non-taxable services. In Ontario, retail sales tax (RST) applies to the purchase of tangible personal property and certain services. Health and leisure services are not subject to RST in Ontario. Demographic changes could, therefore, potentially have a downward impact on RST revenues.

Changing Canadian Consumption Patterns

Industry Canada's *Canada in the 21st Century* series explored the future of the Canadian economy as it reached 2000 and beyond. One report, "Demographic Trends in Canada, 1996-2006: Implications for the Public and Private Sectors,"* noted the differences between the consumption characteristics of the younger and older populations.

- The younger population (under 50 years of age) is mostly focused on the consumption of durable goods (such as houses, cars and refrigerators). As the population ages, saving for retirement and the consumption of certain services (such as health and leisure services) become more important.
- A younger population that consumes essential goods and services may care more about price than quality or service since younger people often fund their consumption through debt. An older population, with less debt and more discretionary income, may be more concerned with quality and service.

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* D. Foot, R. Loreto and T. McCormack, "Demographic Trends in Canada, 1996-2006: Implications for the Public and Private Sectors," Industry Canada, November 1998.

The basket of goods that seniors will purchase in 2025 is probably the greatest unknown with the largest impact on RST revenue as patterns of consumption vary widely over time and by age. Also, the relative prices for the 2025 basket of goods may change as production of goods and services shifts to meet the demands of older people.

In order to estimate the impact of an aging population on RST revenue, goods and services purchased across the entire spectrum of the population must be broken out by age of purchaser. Evidence of this composition of the basket of goods and services consumed by various age groups comes from the most recent Survey of Household Spending (SHS).[1] Applying the SHS spending patterns and the expected 2025 demographic mix to today's population would yield a three to four per cent decline in RST revenue. This represents a decline of $300 million to $350 million in current terms. However, demographic changes alone are not the only factors that will influence the stability of RST revenue over the next 20 years.

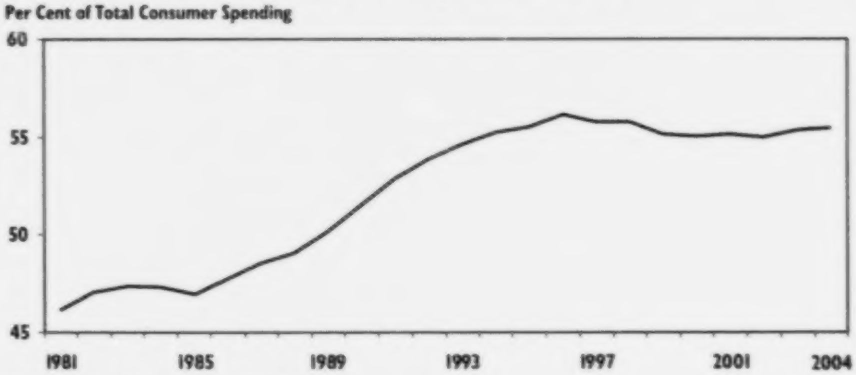
The Impact of Changing Consumer Spending Patterns and the New Economy on RST Revenue

Additional factors, such as evolving consumption patterns and growing acceptance of electronic commerce, may very well impact tax revenues. However, this report is only able to speculate as to the effect of these factors.

The share of services in consumer spending has been on a rising trend historically. The continuation of this trend could lead to slightly lower growth in RST revenue. This assumes the continuation of the current tax structure, which exempts a larger portion of services than goods.

Services represented a relatively small portion of the economy when the sales tax system was introduced in 1961. The share of services in consumer spending had been steadily rising until 1995, but has since levelled off to about 55 per cent of consumer spending. The base-case projection used elsewhere in the report assumes a modest resumption of this upward trend, with the services share of consumer spending rising to 58 per cent by 2025.

Ontario Consumer Spending on Services



Sources: Ontario Ministry of Finance and Statistics Canada.

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[1] *Survey of Household Spending, 2003*, Income Statistics Division, Statistics Canada, Ottawa, May 2005.

The growth of e-commerce has potential implications for sales tax revenue. The Internet is becoming a more integral part of everyday life. Its continued development has led to new electronic services, communication methods and ways of doing business. Although the impact of e-commerce on the tax base has been relatively small to date, as consumers switch to goods and services provided over the Internet, this could change.

The increasing service orientation of the economy and the growth of electronic commerce are trends that will need to be monitored over the next 20 years to assess their potential impact on sales tax revenue.

The Tax Mix

According to *OECD Revenue Statistics*,[2] Canada and the United States rely on taxing personal income and property to a far greater extent and taxing consumption to a lesser extent than any other OECD country. Sales taxes are the single largest source of revenue for most U.S. states while PIT is Ontario's single largest source of revenue, followed closely by RST. As international competition becomes more intense in the coming years, the tax mix of many countries may adjust to new circumstances.

International Forces Influencing Tax Systems

International and regional trends in taxation are becoming more important than ever before as many countries have cut business taxes in an effort to be more competitive and attract new capital investment and jobs. These trends and how they affect Ontario are of growing interest for our society as they could potentially impact on the government's ability to raise revenues to fund social programs and much-needed infrastructure investment.

The existing tax systems of many countries are still largely the product of the era when economies were less open and capital was less mobile. Many of these tax systems do not yet fully reflect global economic developments over the last two decades. With growing competition from emerging low labour-cost nations, falling transportation costs, better communication links, reduction or elimination of many import tariffs, and generally an emerging focus on the global marketplace, incentives to compete through special tax treatment of particular activities are becoming more common.

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[2] Revenue Statistics 1965-2003, 2004 Edition, OECD.

APPENDIX 6B: DETAILED FISCAL PROJECTION TABLES FOR THE BASE CASE AND LOW AND HIGH ECONOMIC GROWTH SCENARIOS

Ontario Key Fiscal Indicators, Base-Case Scenario

	Actual (Average)				Projection (Average)			
	1982-83 to 1989-90	1990-91 to 1994-95	1995-96 to 1999-00	2000-01 to 2004-05	2005-06 to 2009-10	2010-11 to 2014-15	2015-16 to 2019-20	2020-21 to 2024-25
NOMINAL (Per Cent Change)								
Revenue	11.5	2.2	7.2	3.5	4.6	4.1	4.3	4.3
Government of Canada	6.2	7.2	-5.0	15.4	3.8	4.2	3.1	3.1
Expense	10.1	6.4	2.8	4.5	3.5	4.2	4.5	5.0
Health Care	12.0	4.5	4.3	7.5	5.1	5.8	6.0	6.2
Education and Training	8.4	2.6	4.9	5.3	4.0	3.0	3.5	3.8
Children's and Social Services	15.9	10.5	-4.4	4.2	3.4	4.1	4.3	4.5
Other Programs	5.2	5.3	0.4	3.5	-0.9	4.1	4.3	4.3
Interest on Debt	15.5	15.5	7.1	-2.7	3.4	-0.1	-0.5	1.8
REAL (Per Cent Change)*								
Expense	4.1	4.5	1.5	2.8	1.4	2.3	2.3	2.6
Health Care	5.9	2.6	2.9	5.8	3.0	3.9	3.7	3.8
Education and Training	2.5	0.7	3.6	3.6	1.9	1.2	1.3	1.4
Children's and Social Services	9.6	8.5	-5.6	2.5	1.3	2.3	2.1	2.1
Other Programs	-0.5	3.4	-0.9	1.8	-2.9	2.2	2.1	1.9
Interest on Debt	9.2	13.4	5.7	-4.3	1.3	-1.8	-2.6	-0.5
SURPLUS (DEFICIT)								
Surplus/(Deficit), $ Billions**	-2.3	-9.5	-4.2	-1.2	1.4	1.2	-0.3	-7.2
PER CENT OF NOMINAL GDP								
Revenue	13.9	14.8	15.0	14.6	14.9	14.3	13.9	13.6
Government of Canada	2.3	2.4	1.6	1.9	2.3	2.2	2.0	1.9
Expense	15.2	18.0	16.3	14.8	14.9	14.1	13.8	13.9
Surplus/(Deficit)**	-1.3	-3.3	-1.2	-0.2	0.2	0.1	0.0	-0.5
Debt***	12.7	29.2	32.9	27.5	23.2	17.4	13.5	12.3

Notes: All sector totals include operating and capital.
Historical fiscal data as at 2005 Ontario Budget.

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* Deflated by GDP inflation.

** Data shown for surplus/deficit forecast are end-of-period (e.g., 2009-10, 2014-15, 2019-20, 2024-25).

*** Data shown for debt-to-GDP ratio are end-of-period (e.g., 1989-90, 1994-95, 1999-2000, 2004-05, 2009-10, 2014-15, 2019-20, 2024-25).

Ontario Key Fiscal Indicators, Low Growth Scenario

	Actual (Average)				**Projection (Average)**			
	1982-83 to 1989-90	**1990-91 to 1994-95**	**1995-96 to 1999-00**	**2000-01 to 2004-05**	**2005-06 to 2009-10**	**2010-11 to 2014-15**	**2015-16 to 2019-20**	**2020-21 to 2024-25**
NOMINAL (Per Cent Change)								
Revenue	11.5	2.2	7.2	3.5	4.6	3.5	4.0	4.0
Government of Canada	6.2	7.2	-5.0	15.4	3.8	3.9	3.1	3.1
Expense	10.1	6.4	2.8	4.5	3.5	4.1	4.8	5.5
Health Care	12.0	4.5	4.3	7.5	5.1	5.7	6.1	6.4
Education and Training	8.4	2.6	4.9	5.3	4.0	2.6	3.4	3.7
Children's and Social Services	15.9	10.5	-4.4	4.2	3.4	3.9	4.2	4.5
Other Programs	5.2	5.3	0.4	3.5	-0.9	3.8	4.3	4.4
Interest on Debt	15.5	15.5	7.1	-2.7	3.4	0.9	2.6	7.0
REAL (Per Cent Change)*								
Expense	4.1	4.5	1.5	2.8	1.4	2.3	2.3	2.7
Health Care	5.9	2.6	2.9	5.8	3.0	3.9	3.5	3.6
Education and Training	2.5	0.7	3.6	3.6	1.9	0.9	0.9	0.9
Children's and Social Services	9.6	8.5	-5.6	2.5	1.3	2.1	1.6	1.7
Other Programs	-0.5	3.4	-0.9	1.8	-2.9	2.0	1.7	1.5
Interest on Debt	9.2	13.4	5.7	-4.3	1.3	-0.8	0.1	4.1
SURPLUS (DEFICIT)								
Surplus/(Deficit), $ Billions**	-2.3	-9.5	-4.2	-1.2	1.2	-2.0	-8.5	-24.2
PER CENT OF NOMINAL GDP								
Revenue	13.9	14.8	15.0	14.6	14.9	14.3	13.9	13.6
Government of Canada	2.3	2.4	1.6	1.9	2.3	2.2	2.1	1.9
Expense	15.2	18.0	16.3	14.8	14.9	14.4	14.5	15.1
Surplus/(Deficit)	-1.3	-3.3	-1.2	-0.2	0.2	-0.2	-0.8	-1.9
Debt***	12.7	29.2	32.9	27.5	23.2	19.3	18.1	21.5

Notes: All sector totals include operating and capital.
Historical fiscal data as at 2005 Ontario Budget.

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* Deflated by GDP inflation.

** Data shown for surplus/deficit forecast are end-of-period (e.g., 2009-10, 2014-15, 2019-20, 2024-25).

*** Data shown for debt-to-GDP ratio are end-of-period (e.g., 1989-90, 1994-95, 1999-2000, 2004-05, 2009-10, 2014-15, 2019-20, 2024-25).

Ontario Key Fiscal Indicators, High Growth Scenario

	Actual (Average)				Projection (Average)			
	1982-83 to 1989-90	1990-91 to 1994-95	1995-96 to 1999-00	2000-01 to 2004-05	2005-06 to 2009-10	2010-11 to 2014-15	2015-16 to 2019-20	2020-21 to 2024-25
NOMINAL (Per Cent Change)								
Revenue	11.5	2.2	7.2	3.5	4.6	4.7	4.6	4.6
Government of Canada	6.2	7.2	-5.0	15.4	3.8	4.4	3.2	3.2
Expense	10.1	6.4	2.8	4.5	3.5	4.4	4.3	4.5
Health Care	12.0	4.5	4.3	7.5	5.1	6.1	5.9	6.1
Education and Training	8.4	2.6	4.9	5.3	4.0	3.4	3.6	3.8
Children's and Social Services	15.9	10.5	-4.4	4.2	3.4	4.3	4.3	4.4
Other Programs	5.2	5.3	0.4	3.5	-0.9	4.4	4.3	4.3
Interest on Debt	15.5	15.5	7.1	-2.7	3.4	-0.9	-4.0	-8.4
REAL (Per Cent Change)*								
Expense	4.1	4.5	1.5	2.8	1.4	2.3	2.3	2.4
Health Care	5.9	2.6	2.9	5.8	3.0	4.0	3.9	3.9
Education and Training	2.5	0.7	3.6	3.6	1.9	1.4	1.6	1.7
Children's and Social Services	9.6	8.5	-5.6	2.5	1.3	2.3	2.3	2.3
Other Programs	-0.5	3.4	-0.9	1.8	-2.9	2.4	2.4	2.2
Interest on Debt	9.2	13.4	5.7	-4.3	1.3	-2.8	-5.8	-10.3
SURPLUS (DEFICIT)								
Surplus/(Deficit), $ Billions**	-2.3	-9.5	-4.2	-1.2	1.5	4.0	7.3	9.5
PER CENT OF NOMINAL GDP								
Revenue	13.9	14.8	15.0	14.6	14.9	14.4	13.9	13.5
Government of Canada	2.3	2.4	1.6	1.9	2.3	2.1	2.0	1.8
Expense	15.2	18.0	16.3	14.8	14.9	14.0	13.3	12.9
Surplus/(Deficit)	-1.3	-3.3	-1.2	-0.2	0.2	0.5	0.7	0.7
Debt***	12.7	29.2	32.9	27.5	23.1	15.9	9.6	4.5

Notes: All sector totals include operating and capital.
Historical fiscal data as at 2005 Ontario Budget.

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* Deflated by GDP inflation.

** Data shown for surplus/deficit forecast are end-of-period (e.g., 2009-10, 2014-15, 2019-20, 2024-25).

*** Data shown for debt-to-GDP ratio are end-of-period (e.g., 1989-90, 1994-95, 1999-2000, 2004-05, 2009-10, 2014-15, 2019-20, 2024-25).

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INVITATION FOR FEEDBACK

The Ontario Government welcomes your feedback. Please address your comments on this report to:

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